Appendix G
Supplemental Analysis to Support National Park Service Decision

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LIST OF ACRONYMS

ACEC	Area of Critical Environmental Concern
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CNHP	Colorado Natural Heritage Program
CPW	Colorado Parks and Wildlife
dBA	Decibels (A-weighted)
EIS	Environmental Impact Statement
ESA	Endangered Species Act of 1973
FWS	U.S. Fish and Wildlife Service
GAP	Gap Analysis Project
KOP	Key Observation Point
L levels	A-weighted sound level that is exceeded for a specified percentage of time
L_5 level	Noise level that is exceeded only 5 percent of the time
L_{50} level	Noise level that is exceeded only 50 percent of the time
NEPA	National Environmental Policy Act of 1969
NHD	National Hydrography Dataset
NHL	National Historic Landmark
NHT	National Historic Trails
NPS	National Park Service
NRHP	National Register of Historic Places
OHV	Off-highway vehicle
PFYC	Potential Fossil Yield Classification
POD	Plan of Development
Project	Energy Gateway South Transmission Project
PRPA	Paleontological Resources Protection Act
SLRU	Sensitivity Level Rating Unit
SQRU	Scenic Quality Rating Unit
SWReGAP	Southwest Regional Gap Analysis Project
TCP	Traditional Historic Property
U.S.C.	United States Code
USFS	U.S. Forest Service
USGS	U.S. Geological Survey

VRI	Visual Resource Inventory
VRM	Visual Resource Management

APPENDIX G – SUPPLEMENTAL ANALYSIS TO SUPPORT NATIONAL PARK SERVICE DECISION

G.1 Introduction and Background

In the Chapters 3 and 4, the resource data and results of the impact assessment and mitigation planning process are addressed and disclosed by resource; that is, without specific attention to the various jurisdictions crossed along the routes. In response to a request by the National Park Service (NPS), the results specific to the local routing options, or route variations, along Alternative WYCO-B (refer to Section 2.7.1) that occur across and in the vicinity of the NPS-owned lands at Deerlodge Road (refer to Appendix F, Map F-3) are documented in this appendix. The analysis in this appendix tiers to the broader assessment in Chapters 3 and 4 and the comparison of route variations presented in Appendix F.

The Draft Environmental Impact Statement (EIS) presented two route options in this area. One route option, the route of Alternative WYCO-B (the Agency Preferred Alternative route presented in the Draft EIS), parallels existing 345-kilovolt (kV) and 138kV transmission lines (Links C171, C173, and C174). However, this option crosses the Tuttle Ranch Conservation Easement (designated as such in October 2013) and Cross Mountain Ranch Conservation Easement (designated as such in December 2014), the Agreements which exclude new overhead transmission lines crossing the conservation easement. The other option (Links C94 and C93) crosses the Deerlodge Road entrance to Dinosaur National Monument. Considering the potential for the proposed transmission line to cross Deerlodge Road, most of which is owned in fee by the NPS and part of Dinosaur National Monument and NPS' mandate to identify and analyze viable alternatives in cases where NPS-administered land may be impaired, the NPS requested consideration of an additional route option farther north that would cross a segment of Deerlodge Road in a parcel administered by the State of Colorado (Links C94 and C95). The NPS holds a right-of-way from Utah State Institutional Trust Lands for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit if this route option is selected. This route option is the Agency Preferred Alternative route identified in the Final EIS. Refer to Appendix F, Map F-3.

G.2 National Park Service Purpose and Need for the Federal Action

Because NPS owns the portion of the Deerlodge Road crossed by a local routing option considered for Alternative Route WYCO-B (refer to Section 2.7.1), a right-of-way permit from NPS would be required for PacifiCorp (doing business as Rocky Mountain Power (Applicant) to construct and operation this portion of the transmission line, if this route is selected (NPS Organic Act, 16 United States Code [U.S.C.] 1). Under applicable NPS laws and regulations, a right-of-way is a permit issued by the NPS to a third-party to pass over, under, or through NPS property. A right-of way permit is a discretionary and revocable document and, unlike a deeded easement or fee simple ownership, does not convey or imply any interest in the lands. In addition, a right-of-way permit may only be issued under certain circumstances. According to Section 8.6.4.1 of NPS Management Policies, right-of-way permits usually are only issued pursuant to specific statutory authority, and generally if there is not practical alternative to such use of NPS lands. Moreover, under 16 U.S.C. 1, the NPS is under congressional mandate not to allow any of the NPS land that would impair or degrade the values and purposes for which the park was authorized or be incompatible with the public interest, except when authorized by Congress. Although electric transmission infrastructure through park units are authorized by 16 U.S.C. 79 (Rights-of-way for Public Utilities), their installation, operation, and maintenance activities with their park boundaries are subject to NPS right-of-way regulations described in 36 Code of Federal Regulations (CFR) Part 14. These regulations apply to federally owned or controlled lands administered by the NPS, including the

subsurface, which NPS administers for public use purposes. The NPS Management Policies further set out criteria to meet the approval requirements in the regulations (see NPS Management Policies Sections 8.6.4.1, 8.6.4.2, and 8.2), which are compatibility with the public interest, the lack of a practicable alternative location, and no unacceptable impacts on park resources, values, or purposes.

The information in this appendix is intended to supplement the EIS with additional information and more detailed analysis that would be required by the agency to fully consider the Applicant's application for right-of-way across Deerlodge Road, if needed.

G.3 National Park Service Decisions to be Made

If the selected route crosses NPS-owned lands at Deerlodge Road, the Applicant would be required by apply for a right-of-way permit to pass over NPS-owned land. In this case, the decision to be made by the NPS is whether or not to grant a permit for right-of-way across and, if so, under what terms and conditions.

G.4 Study Approach

While tiering to the broader assessment in Chapters 3 and 4 and the comparison of routing options in Appendix F, this appendix presents a more focused analysis to compare the three routing options in this area analyzed in the Final EIS to support NPS in its decision whether or not to grant right-of-way should the route option that crosses NPS-owned lands at Deerlodge Road, should it become the selected route.

The three routing options start on the north side of U.S. Highway 40 and end 6.5 to 7.7 miles to the southwest on the south side of U.S. Highway 40. Refer to Appendix F, Map F-3. Alternative WYCO-B immediately crosses U.S. Highway 40, runs south for 0.8 miles, and then follows an existing transmission line corridor through the Tuttle Ranch Conservation Easement for 3.0 miles and Cross Mountain Ranch Conservation Easement for 1.1 miles. Variation 1 parallels the north side of U.S. Highway 40 for 3.8 miles, crosses Deerlodge Road in an area under NPS jurisdiction, continues north of U.S. Highway 40 for 1.9 miles, crosses U.S. Highway 40, and terminates at an existing transmission line corridor after an additional 0.8 miles. Variation 2 parallels the north side of U.S. Highway 40 for 2 miles, turns west for 2 miles, crosses Deerlodge Road on lands administered by the State of Colorado, then turns south, crosses U.S. Highway 40, and ends at an existing transmission line corridor after 3.7 miles.

Generally, the methodology for comparing and analyzing the local route variations is the same as described in Chapters 3 and 4. However some additional field verification was conducted for vegetation communities (including habitat for sensitive plants), wetlands, and visual resources at the request of the NPS, and is incorporated into the analysis, as appropriate. The reader is referred to Chapters 3 and 4 for the following sections for each resource:

- Introduction and Regulatory Framework
- Issues Identified for Analysis
- Regional Setting
- Study Methodology

G.5 Resources Analyzed

This section describes the affected environment and known and predicted effects of implementing the Energy Gateway South Transmission Project (Project) on resources relevant to the issues and concerns identified during agency and public scoping and during public review of the Draft EIS. The affected environment and effects analysis were assessed for each local routing option in the vicinity of the NPS-owned lands at Deerlodge Road. Mapping of resource inventory and impact levels associated with the three route variations for each resource is presented in Exhibit G1.

Each resource discussion is organized as follows:

- Local Setting
- Affected Environment
- Environmental Consequences
- Summary

The first map, Map G-1, presents construction access levels present in the vicinity of the NPS-owned lands at Deerlodge Road (refer to Section 2.5.1.2 for a description of construction access levels).

G.5.1 Earth Resources

This section identifies the existing soil and mineral resources, and geological hazards along the three route variations, assesses the potential impacts on the resources from implementation of the Project, and the potential for geological hazards to affect the Project. Issues related to earth resources that were identified during scoping are addressed in this section, including:

- Removal or mixing of surface soil horizons
- Loss of soil-stabilizing vegetation
- Compaction of soils
- Conversion of Prime Farmlands
- Restriction of extraction of a mineral resource
- Potential effects of geological hazards (landslides, unstable slopes, floodplains, and faults)

The resource inventory and impact levels associated with the three route variations are presented on Maps G-2 through G-4.

G.5.1.1 Local Setting

The three variations are located north of the Colorado Plateau Physiographic Province within the Yampa Plateau. Locally, the three variations are southeast of the Yampa River in a topographic low called Twelvemile Gulch with Springs Ridge to the south and Cross Mountain to the north.

G.5.1.2 Affected Environment

The three routing options are located in the Colorado Plateau Physiographic Province. Locally, the three routing options are southeast of the Yampa River in a topographic low called Twelvemile Gulch with Springs Ridge to the south and Cross Mountain to the north. The geologic hazards for the three routing options would be similar. The extent of the areas with susceptibility to flooding and landslides would differ. All three options are entirely within an area with low susceptibility to flooding.

Alternative WYCO-B (Links C92, C171, C173, and C174)

This routing option crosses 1.0 miles of moderate susceptibility to landslides. This options crosses 0.2 miles of Prime Farmlands and 0.6 miles of soils with moderate susceptibility to wind and water erosion. This option crosses 2.4 miles of oil and gas leases.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 also crosses 0.4 mile of area with moderate susceptibility to landslides. This variation has no impact on Prime Farmlands or on soils with susceptibility to wind and water erosion. There are 2 miles of oil and gas leases crossed by this variation.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 crosses 0.4 mile of area with moderate susceptibility to landslides. This variation crosses 0.6 mile of Prime Farmlands, 0.5 mile of soils with moderate susceptible to wind erosion, and 0.5 mile of soils with high susceptibility to wind erosion. Variation 2 crosses 2.8 miles of oil and gas leases.

G.5.1.3 Environmental Consequences

Alternative WYCO-B (Links C92, C171, C173, and C174)

This routing option could have the greatest potential impact from landslides. This variation would have less impact on Prime Farmlands, and soils susceptible to erosion than Variation 2, the state-parcel crossing, but greater impacts on soils than the NPS-jurisdiction crossing. This variation would have less impact on oil and gas leases than the Variation 2, state-parcel crossing, but more than the NPS-jurisdiction crossing.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Overall impacts on earth resources would be less for Variation 1 than Variation 2, the state-parcel crossing and the route of Alternative WYCO-B.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 would have greater impacts on Prime Farmlands and soils with high susceptibility to wind erosion than the route of Alternative WYCO-B. This variation also would have greater impact on oil and gas leases than the other two routing options.

G.5.1.4 Summary

Impacts from geologic hazards would be similar for all three routing options. There are areas with higher landslide susceptibility near Links C92, C94, and C171. The impacts on soils are similar for all three routing options, with Alternative WYCO-B crossing more farmlands. Impacts on minerals would be similar, but Alternative WYCO-B crosses more mileage of areas designated as a mineral resource.

G.5.2 Paleontological Resources

This section discusses paleontological resources along the three variations and assesses the potential impacts on the resources from implementation of the Proposed Action.

The resource inventory and impact levels associated with the three route variations are presented on Map G-5.

G.5.2.1 Local Setting

The three variations are located north of the Colorado Plateau Physiographic Province within the Yampa Plateau. Locally, the three variations are southeast of the Yampa River in a topographic low called Twelvemile Gulch with Springs Ridge to the south and Cross Mountain to the north.

G.5.2.2 Affected Environment

The three variations cross different extents of the Browns Park Formation and the Mancos Shale. The paleontological resources inventory and residual impacts are presented in Table G-1. The Browns Park Formation has a potential fossil yield classification (PFYC) of 5, and the Mancos Shale has a PFYC of 3. All variations have a low density for fossil localities. The state-parcel crossing crosses the greatest amount of units with a PFYC of 5. The route of Alternative WYCO-B variation crosses the least miles of areas with PFYC of 5.

TABLE G-1
PALEONTOLOGICAL RESOURCES INVENTORY AND RESIDUAL IMPACTS FOR NATIONAL PARK SERVICE ROUTE VARIATIONS (MILES CROSSED)

	Potential Fossil Yield Classification		Fossil Locality Density	Residual Impacts
Route Variation	3	5	Low	Low
Alternative WYCO-B	0.4	6.1	6.5	6.5
National Park Service-jurisdiction crossing (Variation 1)	0.0	6.5	6.5	6.5
State-parcel crossing (Variation 2)	0.7	7.0	7.7	7.7

G.5.2.3 Environmental Consequences

As a design feature of the Proposed Action, areas with very high or moderate (PFYC 5 and 3) would be surveyed prior to construction to support development of the Paleontological Resources Treatment Plan (PRTP), which would be implemented before and/or during construction. The implementation of the PRTP would minimize the potential for impacts on paleontological resources associated with each route variation.

G.5.2.4 Summary

The impacts on paleontological resources for all three routing options are similar. All three cross the Browns Park Formation which has a PFYC of 4. The southern alternative also crosses a small portion of the Mancos Shale, which has a PFYC of 3.

G.5.3 Water Resources

This section describes the existing condition of water resources and analyzes the potential effects on water resources that could result from construction, operation, and maintenance of the Project in the vicinity of the Dinosaur National Monument Deerlodge Road. This analysis tiers to the broader assessment in Section 3.2.4. Issues related to water resources were identified during the scoping process and include (1) how the Project would affect water quality and (2) what short- and long-term impacts on water resources would be expected from implementation of the Project. Specific issues considered for analyses are presented in Section 3.2.4.

The resource inventory and impact levels associated with the three routing options are presented on Map G-6 at the end of this appendix.

G.5.3.1 Local Setting

The three routing options addressed in this document are located in the Colorado Plateau Ecoregion, as adapted from *North American Terrestrial Ecoregions—Level III* (Commission for Environmental Cooperation 2011) and the Twelvemile Gulch catchment basin, which flows into the Yampa River as part of the Lower Yampa Subbasin near Cross Mountain (refer to MV-6). Water resources in the study corridors for the route variations addressed in this document are limited. There are two named drainages crossed by the three routing options: (1) Twelvemile Gulch, an intermittent stream that supports wetland vegetation in some areas and (2) Mud Springs Gulch, an intermittent drainage which is a tributary to Twelvemile Gulch. Primarily, aquatic habitat in Twelvemile Gulch is classified North American arid west emergent marsh. The dominant terrestrial habitat adjacent to aquatic habitats consists of Intermountain Sagebrush Shrubland and Steppe. Refer to Appendix J for detailed descriptions of land-cover categories.

G.5.3.2 Affected Environment

Due to the arid characteristics of the region, water resources in the analysis area are limited to intermittent streams, stock ponds, and palustrine emergent wetlands. Water resources directly and indirectly crossed by the three routing options are listed in Table G-2. Direct crossings are water resources directly crossed be the routing option centerline. Indirect crossings are water resources located within 328 feet (100 meters) of the route centerline but are not directly crossed.

TABLE G-2
ROUTE VARIATION COMPARISON FOR WATER RESOURCES

Route Variation	Number and Type of Crossings					
	Intermittent Stream		Lake, Reservoir, Pond		Palustrine Emergent Wetlands	
	Direct	Indirect	Direct	Indirect	Direct	Indirect
Alternative WYCO-B	9	1	0	0	0	3
National Park Service-jurisdiction crossing (Variation 1)	12	7	0	3	1	3
State-parcel crossing (Variation 2)	13	3	0	0	1	0

Alternative WYCO-B (Links C92, C171, C173, and C174)

Alternative WYCO-B is located south of U.S. Highway 40 and colocated with an existing 345kV transmission line. The variation would cross through the Tuttle Ranch Conservation Easement and Cross Mountain Conservation Easement. The route variation would make a total of nine crossings of intermittent streams including:

- Three crossings of unnamed tributaries to Mud Springs Gulch in an area with no visible riparian habitats and
- Four crossings of unnamed tributaries to Twelvemile Gulch.

Wetland habitats crossed near Alternative WYCO-B are classified as North American arid west emergent marsh. These potential wetlands are located on private property and were not able to be visited during the field visit. Based on an interpretation of aerial photography in the area, the wetlands crossed appear to be relatively isolated. No perennial water resources would be crossed on NPS-administered lands.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 is located north of U.S. Highway 40 and crossed Deerlodge Road in an area under NPS jurisdiction. Water resources located along this route variation largely comprise intermittent tributaries of Twelvemile Gulch and Mud Springs Wash, which are intermittent tributaries of the Yampa River. Three stock ponds are indirectly crossed and a spring with a short outflow is directly crossed by the southernmost end of Link C93.

The water-resource crossings listed in Table G-2 for Variation 1 include:

- One crossing of Mud Springs Gulch in an area with no visible aquatic or riparian habitats;
- One crossing of an unnamed tributary to Mud Springs Gulch in an area with no visible aquatic or riparian habitats;
- One crossing of Twelvemile Gulch in a location with no visible aquatic or riparian habitats; and
- Two crossings of an unnamed tributary to Twelvemile Gulch with small areas of visible wetland vegetation.

Additionally, Variation 1 is parallel to and located within 500 feet of the unnamed tributary to Twelvemile Gulch for approximately 0.5 mile. The unnamed tributary appears to support wetland vegetation in this area. Wetland habitats crossed by Variation 1 are classified as North American arid west emergent marsh. These potential wetlands are located on private property and were not accessible to be visited during the field visit.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and would cross the Deerlodge Road on lands administered by the State of Colorado. Variation 2 makes a total of 13 crossings of intermittent streams including but not limited to:

- One crossing of Mud Springs Gulch in an area with no visible riparian habitats;
- One crossing of an unnamed tributary to Mud Springs Gulch in an area with no visible riparian habitats;
- One crossing of Twelvemile Gulch in a location with small areas of visible wetland vegetation; and
- Two crossings of unnamed tributaries to Twelvemile Gulch with no visible riparian habitats.

Wetland habitats crossed by Variation 2 are classified as North American arid west emergent marsh. These potential wetlands are located on lands administered by the State of Colorado and were visited during the field visit (refer to Section G.5.4).

G.5.3.3 Environmental Consequences

The types of potential effects on water resources that could occur under all routing options and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.4. Estimated residual impacts on water resources for the route variations addressed in this document after the application of selective mitigation measures are presented in Table G-3.

TABLE G-3
RESIDUAL IMPACTS FOR WATER RESOURCES (MILES CROSSED)

Route Variation	Total Miles	Intermittent Stream		Lake, Reservoir, Pond		Palustrine Emergent Wetlands		Residual Impacts	
		None	Low	None	Low	None	Low	None	Low
Alternative WYCO-B	6.5	5.0	1.5	6.5	–	6.1	0.4	4.8	1.7
National Park Service-jurisdiction crossing (Variation 1)	6.5	3.9	2.6	6.2	0.3	5.9	0.6	3.9	2.6
State-parcel crossing (Variation 2)	7.7	4.9	2.8	7.7	–	7.6	0.1	4.9	2.8

Alternative WYCO-B (Links C92, C171, C173, and C174)

The anticipated residual impacts on water resources associated with this routing option would be less than those impacts associated with Variation 1 and Variation 2. However, the route of Alternative WYCO-B could result in greater impacts on palustrine emergent wetlands than Variation 1 and Variation 2 (Table G-3).

After application of selective mitigation measures, it is anticipated that all wetlands and springs could be avoided by Project activities such as cut and fill. The types of potential effects on water resources that could occur under all Project alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.4. Alternative WYCO-B would require crossing intermittent or ephemeral drainages. Potential effects on these resources and measures that could be used to reduce these impacts are described in detail in Section 3.2.4. After application of mitigation measures, it is anticipated that wetlands could be avoided and residual impacts associated with the crossing intermittent streams would not result in any residual impacts. Additionally, Alternative WYCO-B is colocated with an existing power line so impacts would occur in areas of previous disturbance. Water resources would not be anticipated to be directly affected on lands administered by the NPS.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

The anticipated residual impacts on water resources associated with Variation 1 would be greater than those impacts associated with the route of Alternative WYCO-B and would be similar to the impacts associated with Variation 2 (Table G-3).

After application of selective mitigation measures, it is anticipated that all wetlands and springs could be avoided by Project activities such as cut and fill. Intermittent streams crossed by the Project would be avoided by transmission line tower placement but may be crossed by access roads. Potential effects on these resources and measures that could be used to reduce these impacts are described in detail in Section 3.2.4. After application of mitigation measures, it is anticipated that impacts associated with crossing intermittent streams would not result in any residual impacts. Variation 1 indirectly crosses three stock ponds which account for 0.3 mile of residual impacts. Actual disturbance to these ponds would likely be avoided and due to the low resource value of stock ponds, impacts could be easily mitigated. Variation 1 is parallel to U.S. Highway 40 and residential developments along the highway; thus, impacts associated with this variation would occur in more previously disturbed areas than the Variation 2. However, this variation would result in of the most potential indirect impacts on palustrine emergent wetlands of the three routing options and would directly cross a spring at the southernmost end of Link C93. Water resources would not be anticipated to be directly affected on lands administered by the NPS.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

The anticipated residual impacts on water resources associated with Variation 2 would be greater than those impacts associated with Alternative WYCO-B and would be similar to the impacts associated with Variation 1 (Table G-3).

After application of selective mitigation measures, it is anticipated that all wetlands and springs could be avoided by Project activities such as cut and fill. Intermittent streams crossed by the Project would be avoided by transmission line tower placement but may be crossed by access roads. Potential effects on these resources and measures that could be used to reduce these impacts are described in detail in Section 3.2.4. After application of mitigation measures, it is anticipated that impacts associated with crossing intermittent streams would not result in any residual impacts. Variation 2 is located in a less developed area than Variation 1 and the route of Alternative WYCO-B, so impacts associated with this routing option would occur in areas with less existing disturbance. Water resources would not be anticipated to be directly affected on lands administered by the NPS.

G.5.3.4 Summary

All of the routing options would affect similar water resources in the Twelvemile Gulch and would have similar effects. After application of selective mitigation measures, it is anticipated that the most sensitive water resources crossed (i.e., palustrine emergent wetlands and springs) could be avoided by activities such as cut and fill by all three routing options. However, intermittent streams could be crossed by new or improved access routes required by any of the routing options.

Alternative WYCO-B would have the least overall impacts on water resources, would be colocated with existing high-voltage transmission line infrastructure and would be located the furthest from the Yampa River, the area's major perennial water body. Variation 1 and Variation 2 would have similar overall residual impacts on water resources. However, Variation 1 would affect more palustrine emergent wetlands than Variation 2.

G.5.4 Vegetation

This section describes the existing condition of vegetation resources and analyzes the potential effects on vegetation resources that could result from construction, operation, and maintenance of the Project in the vicinity of the Dinosaur National Monument Deerlodge Road. This analysis tiers to the broader assessment in Section 3.2.5.

The resource inventory and impact levels associated with the three routing options are presented on Map G-7 at the end of this appendix.

G.5.4.1 Local Setting

The three routing options addressed in this document are located in the Colorado Plateau Ecoregion, as adapted from *North American Terrestrial Ecoregions—Level III* (Commission for Environmental Cooperation 2011) and the Twelvemile Gulch catchment basin, which flows into the Yampa River as part of the Lower Yampa Subbasin near Cross Mountain (refer to Section 3.2.5). A total of 86 Gap Analysis Project (GAP) land-cover categories occur in the Project area (U.S. Geological Survey [USGS] 2010b). For the purposes of the EIS analysis, the 86 GAP land-cover categories were consolidated and reclassified into 16 primary vegetation communities based on similarities in species composition, vegetative structure, and topographic positioning. Each vegetation community is described in Section 3.2.5 (full descriptions of land-cover categories in each primary vegetation community can be found in Appendix J, Table J-1). Of the 16 primary vegetation communities, 7 are present variation route study area: agriculture, big

sagebrush, developed, grassland, pinyon-juniper, shrub shrub/steppe, and small areas of wetland. Habitats crossed by the route variations are primarily dominated by big sagebrush vegetation community composed of Inter-Mountain Basin big sagebrush shrubland and Inter-Mountain Basin big sagebrush steppe land-cover categories. Pinyon-juniper vegetation communities consisting of the Inter-Mountain Basin Juniper Savanna land-cover category are the next most prevalent vegetation community and are located on adjacent hillslopes. In addition, wetland vegetation communities composed of the North American arid west emergent marsh land-cover category are interspersed along the bottom of Twelvemile Gulch.

The resource inventory and impact levels associated with the three routing options are presented on Map G-7.

G.5.4.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B is located south of U.S. Highway 40, and colocated with an existing 345kV transmission line. The route of Alternative WYCO-B crosses through the Tuttle Ranch Conservation Easement. Five primary vegetation communities are crossed by the route of Alternative WYCO-B: big sagebrush, developed, grassland, pinyon-juniper, and shrub/shrub steppe (Table G-4). Sparse wetland vegetation is located along Twelvemile Gulch within the geographic scope of analysis. Vegetation communities on lands under NPS jurisdiction would not be crossed by Alternative WYCO-B.

Observations made during the field visit noted the following plant species were components of the vegetation visible from U.S. Highway 40:

- Dominant overstory of *Artemisia tridentata* and
- Dominant non-native grass understory of *Agropyron cristatum* and *Bromus tectorum*; not highly disturbed, though identified as "Developed/Disturbed" in GAP mapping.

TABLE G-4
ROUTE AREA COMPARISON FOR PRIMARY VEGETATION COMMUNITIES

Route Variation	Total Miles	Primary Vegetation Communities (miles crossed)[1]					
		Agriculture	Big Sagebrush	Developed/Disturbed	Grassland	Pinyon-Juniper	Shrub/Shrub Steppe
Alternative WYCO-B	6.5	0.0	4.9	0.4	0.5	0.6	0.1
BLM-administered land	*2.1*	*0.0*	*1.4*	*0.4*	*0.1*	*0.2*	*0.0*
Private land	*4.4*	*0.0*	*3.5*	*0.0*	*0.4*	*0.4*	*0.1*
NPS-jurisdiction crossing (Variation 1)	6.5	0.1	4.9	0.5	0.2	0.8	0.0
NPS-administered land	0.1	0.0	0.1	0.0	0.0	0.0	0.0
BLM-administered land	*0.2*	*0.0*	*0.0*	*0.1*	*0.1*	*0.0*	*0.0*
Private land	*6.2*	*0.1*	*4.8*	*0.4*	*0.1*	*0.8*	*0.0*

TABLE G-4
ROUTE AREA COMPARISON FOR PRIMARY VEGETATION COMMUNITIES

Route Variation	Total Miles	Primary Vegetation Communities (miles crossed)[1]					
		Agriculture	Big Sagebrush	Developed/Disturbed	Grassland	Pinyon-Juniper	Shrub/Shrub Steppe
State-parcel crossing (Variation 2)	7.7	0.2	5.5	0.3	0.0	1.6	0.1
BLM-administered land	*1.7*	*0.0*	*0.6*	*0.2*	*0.0*	*0.9*	*0.0*
State-administered land	*1.0*	*0.0*	*0.7*	*0.0*	*0.0*	*0.2*	*0.1*
Private land	*5.0*	*0.2*	*4.2*	*0.1*	*0.0*	*0.5*	*0.0*

NOTES:
[1]Minor wetland communities were noted in the field visit, but are too small to be detected using the impact assessment methodology.
BLM = Bureau of Land Management
NPS = National Park Service

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located north of U.S. Highway 40 and crosses the Deerlodge Road in an area under NPS jurisdiction. Five primary vegetation communities are crossed by Variation 1: agriculture, big sagebrush, developed, grassland, and pinyon-juniper (Table G-4). Vegetation communities crossed by Variation 1 are mostly big sagebrush vegetation communities with sparse juniper cover. In addition, evidence of historic patchy wildfire was observed during the field visit. Sparse wetland vegetation is located along Twelvemile Gulch within the geographic scope of analysis. Vegetation communities on lands under NPS jurisdiction would be spanned, as Deerlodge Road is the only area under NPS jurisdiction that would be crossed by the Project.

Observations made during the field visit noted the following plant species were components of the vegetation visible from Deerlodge Road, U.S. Highway 40, and other accessible areas crossed by the route:

- Dominant overstory of *Artemisia tridentata* with sparse distribution of *Chrysothamnus viscidiflorus* and *Ericameria nauseosa*;
- Dominant grass understory of *Agropyron cristatum* with sparse distribution of *Sporobolos sp.*, *Hesperostipa comata,* and *Agrostis sp.*;
- Sparse forb distribution consisting of *Medicago sativa*, *Opuntia sp.*, *Sphaeralcea sp.,* and *Phlox sp.*; and
- Areas without sagebrush cover are dominated by *Agropyron cristatum*, likely seeded post-fire.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and crosses the Deerlodge Road on lands administered by the State of Colorado. Five primary vegetation communities are crossed by Variation 2: agriculture, big sagebrush, developed, pinyon-juniper, and shrub/shrub steppe (Table G-4). Vegetation communities crossed by Variation 2 are mostly big sagebrush vegetation communities with pinyon-juniper vegetation

communities on northeastern aspects. Wetland vegetation is located along Twelvemile Gulch within the geographic scope of analysis. Evidence of a historic wildfire was observed on the west side of Deerlodge Road during the field visit, but sagebrush cover is generally more consistent than in Variation 1. Vegetation communities on lands under NPS jurisdiction would not be crossed by Variation 2.

Observations made during the field visit noted the following plant species were components of the vegetation visible from Deerlodge Road, U.S. Highway 40, and other accessible areas crossed by the route:

- Dominant overstory of *Juniperus osteosperma* and *Artemisia tridentata* with sparse distribution of *Atriplex canescens*;
- Dominant grass understory of *Agropyron cristatum*; higher cover of native grasses than Variation 1, including *Koeleria macrantha, Achnatherum hymenoides, Sporobolos sp., Hesperostipa comata,* and *Agrostis sp.*;
- Greater diversity and cover or forb species than Variation 1, including *Eriogonum sp., Cirsium sp., Astragalus sp., Antennaria sp.,* and *Phlox sp.*; and
- Wetland vegetation community mainly Graminoid-dominated with *Leymus cinereus, Agropyron cristatum, Distichlis spicata,* and *Juncus balticus*. Forbs include *Glycyrrhiza lepidota, Iva axillaris, Cirsium sp.,* and sparse distribution of young *Salix exigua.*

G.5.4.3 Environmental Consequences

The estimated levels of residual impacts on vegetation communities are shown in Table G-5.

TABLE G-5
ROUTE VARIATION COMPARISON FOR RESIDUAL IMPACTS ON VEGETATION COMMUNITIES

Route Variation	Total Miles	Primary Vegetation Communities (miles crossed)			
		Low	Low-Moderate	Moderate	Moderate-High
Alternative WYCO-B	6.5	0.4	0.7	5.4	0.0
BLM-administered land	*2.1*	*0.4*	*0.2*	*1.5*	*0.0*
Private land	*4.4*	*0.0*	*0.5*	*3.9*	*0.0*
NPS-jurisdiction crossing (Variation 1)	6.5	0.6	0.8	5.1	0.0
NPS-administered land	*0.1*	*0.0*	*0.0*	*0.1*	*0.0*
BLM-administered land	*0.2*	*0.1*	*0.0*	*0.1*	*0.0*
Private land	*6.2*	*0.5*	*0.8*	*4.9*	*0.0*
State-parcel crossing (Variation 2)	7.7	0.5	1.7	5.5	0.0
BLM-administered land	*1.7*	*0.2*	*0.9*	*0.6*	*0.0*
State-administered land	*1.0*	*0.0*	*0.3*	*0.7*	*0.0*
Private land	*5.0*	*0.3*	*0.5*	*4.2*	*0.0*

NOTES:
BLM = Bureau of Land Management
NPS = National Park Service

Alternative WYCO-B (Links C92, C171, C173, and C174)

Based on the impact-assessment criteria developed for the EIS, the impacts associated with the route of Alternative WYCO-B would be primarily moderate. Moderate impacts are associated with the predominance of big sagebrush and grassland communities. There are no moderate-high impacts anticipated. The route of Alternative WYCO-B would result in permanent loss of vegetative cover due to access-road and transmission-line construction (Table G-5). These losses would occur predominantly in

big sagebrush vegetation communities, with smaller areas of loss in developed/disturbed, grassland, pinyon-juniper, and shrub/shrub steppe vegetation communities (Table G-6). Ground disturbance in vegetation communities associated with the route of Alternative WYCO-B would not occur on lands administered by the NPS. Alternative WYCO-B does not cross any areas under NPS jurisdiction.

The types of potential effects on vegetation habitats that could occur and the degree to which these effects would be mitigated or avoided are described in Section 3.2.5.

TABLE G-6
ROUTE AREA COMPARISON FOR PRIMARY VEGETATION COMMUNITIES (IN ACRES)

Route Variation	Total Ground Disturbance (acres)	Estimated Disturbance of Primary Vegetation [1]					
		Agriculture	Big Sagebrush	Developed/ Disturbed	Grassland	Pinyon-Juniper	Shrub/Shrub Steppe
Alternative WYCO-B	99	0	75	6	8	9	2
BLM-administered land	*32*	*0*	*21*	*6*	*2*	*3*	*0*
Private land	*67*	*0*	*53*	*0*	*6*	*6*	*2*
NPS-jurisdiction crossing (Variation 1)	94	1	71	7	3	12	0
NPS-administered land[2]	–	–	–	–	–	–	–
BLM-administered land	*3*	*0*	*0*	*1*	*1*	12	*0*
Private land	*89*	*1*	*69*	*6*	*1*	0	*0*
State-parcel crossing (Variation 2)	119	3	85	5	0	25	2
BLM-administered land	*26*	*0*	*9*	*3*	*0*	14	*0*
State-administered land	*15*	*0*	*11*	*0*	*0*	3	*2*
Private land	*77*	*3*	*65*	*2*	*0*	8	*0*

NOTES:
[1]Minor wetlands were noted in the field visit, but are too small to be detected using the impact assessment methodology.
[2]No ground disturbance in vegetation communities on NPS-administered lands would occur as all lands under NPS-jurisdiction would be spanned by the Project.
BLM = Bureau of Land Management
NPS = National Park Service

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Based on the impact assessment criteria developed for the EIS, the impacts associated with Variation 1 would be primarily moderate. Moderate impacts are associated with the predominance of big sagebrush and grassland communities. There are no moderate-high impacts anticipated. Variation 1 would result in permanent loss of vegetative cover due to access road and transmission line construction (Table G-5). These losses would occur predominantly in big sagebrush and pinyon-juniper vegetation communities, with smaller areas of loss in agriculture, developed/disturbed, and grassland vegetation communities (Table G-6). Ground disturbance in vegetation communities associated with Variation 1 would not occur on lands administered by the NPS. Variation 1 would span the area of Deerlodge Road under NPS jurisdiction.

The types of potential effects on vegetation habitats that could occur and the degree to which these effects would be mitigated or avoided are described in Section 3.2.5.4.3. In addition to adherence with regulatory statutes as described in Section 3.2.5.1.1, invasive plant prevention guidelines as described in the Dinosaur National Monument Invasive Plant Management Plan and Environmental Assessment,

Appendix D, would be followed during construction, operation, and maintenance of the Project on NPS administered lands (NPS 2005).

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Based on the impact assessment criteria developed for the EIS, the impacts associated with Variation 2 would be primarily moderate. Moderate impacts are associated with the predominance of big sagebrush and grassland communities. There are no moderate-high impacts anticipated. Variation 2 would result in permanent loss of vegetative cover due to access road and transmission line construction (Table G-5). These losses would occur predominantly in big sagebrush and pinyon-juniper vegetation communities, with smaller areas of loss in agriculture, developed/disturbed, and shrub/shrub steppe vegetation communities (Table G-6). Ground disturbance in vegetation communities associated with Variation 2 would not occur on lands administered by the NPS. Variation 2 does not cross any areas under NPS jurisdiction.

The types of potential effects on vegetation habitats that could occur and the degree to which these effects would be mitigated or avoided are described in Section 3.2.5.

G.5.4.4 Summary

All of the routing options cross similar amounts and types of vegetation communities and would have similar types of impacts. Additionally, potential impacts on vegetation communities could be reduced through implementation of Project design features for environmental protection (Table 2-8) and selective mitigation measures (Table 2-13) for all route variations.

Land uses and management practices on lands surrounding the route variations have altered the composition of the vegetation communities and introduced non-native species to different degrees in vegetation communities crossed.

G.5.5 Special Status Plants

This section describes the existing condition of special status plants and analyzes the potential effects on these resources that could result from construction, operation, and maintenance of the Project in the vicinity of the Dinosaur National Monument Deerlodge Road. This analysis tiers to the broader assessment in Section 3.2.6. Special status plant species are those federally listed as either endangered, threatened, or candidates for protection under the Endangered Species Act of 1973 (ESA) or those considered sensitive by the Bureau of Land Management (BLM) and/or state. The NPS Dinosaur National Monument does not maintain an agency-specific list of special status plants, but considers species managed by U.S. Fish and Wildlife Service (FWS), BLM, and the State of Colorado in the decision making process.

G.5.5.1 Local Setting

The three route variations addressed in this document are located in the Colorado Plateau Ecoregion, as adapted from *North American Terrestrial Ecoregions—Level III* (Commission for Environmental Cooperation 2011) and the Twelvemile Gulch catchment basin which flows into the Yampa River as part of the Lower Yampa Subbasin near Cross Mountain (refer to Section 3.2.5). A total of 86 National Land Cover GAP land-cover categories identified by the GAP dataset occur in the Project area (USGS 2010b). For the purposes of the EIS analysis, the 86 GAP land-cover categories were consolidated and reclassified into 16 primary vegetation communities based on similarities in species composition, vegetative structure, and topographic positioning. Each vegetation community is described in Section 3.2.5 (full descriptions of land-cover categories in each primary vegetation community can be found in Appendix J, Table J-1).

Of the 16 primary vegetation communities, 7 are present variation route study area: agriculture, big sagebrush, developed, grassland, pinyon-juniper, shrub shrub/steppe, and small areas of wetland. Habitats crossed by the route variations are primarily dominated by big sagebrush vegetation community composed of Inter-Mountain Basin big sagebrush shrubland and Inter-Mountain Basin big sagebrush steppe land-cover categories. Pinyon-juniper vegetation communities consisting of the Inter-Mountain Basin Juniper Savanna land-cover category are the next most prevalent vegetation community and are located on adjacent hillslopes. In addition, wetland vegetation communities composed of the North American arid west emergent marsh land-cover category are interspersed along the bottom of Twelvemile Gulch.

A total of 61 special status plant species have the potential to occur in the study corridors analyzed in the EIS (Table 3-66). Of the 61 plant species analyzed only one BLM-sensitive plant species, caespitose cat's-eye (*Cryptantha caespitosa*), is known to occur within 1 mile of the routing options addressed in this document. Caespitose cat's-eye occurs on sparsely vegetated shale knolls at 6,200 to 8,100 feet. Habitat includes pinyon-juniper or sagebrush and is typically found with other cushion plants (Colorado Natural Heritage Program [CNHP] 1997). There are no known occurrences of any ESA-listed plant species in the vicinity of the route variations addressed in this document. Appendix J includes detailed species descriptions, life history, and occurrence information for all species analyzed.

The resource inventory and impact levels associated with the three routing options are presented on Map G-7.

G.5.5.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

Alternative WYCO-B is located south of U.S. Highway 40, and colocated with an existing 345kV transmission line. The route of Alternative WYCO-B crosses through the Tuttle Ranch Conservation Easement. The dominant terrestrial habitat crossed by the route of Alternative WYCO-B consists of Intermountain Sagebrush Shrubland and Steppe. Inter-Mountain Basin Juniper Savanna is located on adjacent hillslopes. BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1 mile of the routing option study area. Occurrence data for the species is derived from field surveys conducted in 1983 as archived by the CNHP. Information regarding specific locations or number of individuals that occur in association with the route variation is not available. However, the relative likelihood of suitable habitat for this species to be crossed by the route is restrained, as big sagebrush and pinyon-juniper vegetation communities associated with sparsely vegetated shale knolls occur irregularly throughout the area. Caespitose cat's-eye is the only special status plant species that is known to occur or is likely to occur in association with the route of Alternative WYCO-B. Observations made during the field visit did not note presence of the species; however, vegetation communities known to provide suitable habitat for the species were observed in association with the route variation (refer to Section G.5.4).

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located north of U.S. Highway 40 and crosses the Deerlodge Road in an area under NPS jurisdiction. The dominant terrestrial habitat crossed by Variation 1 consists of Intermountain Sagebrush Shrubland and Steppe. Inter-Mountain Basin Juniper Savanna is located on adjacent hillslopes. BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1 mile of the routing option study area. Occurrence data for the species is derived from field surveys conducted in 1983 as archived by the CNHP. Information regarding specific locations or number of individuals that occur in association with Variation 1 is not available. However, the relative likelihood of suitable habitat for this

species to be crossed by the route is restrained, as big sagebrush and pinyon-juniper vegetation communities associated with sparsely vegetated shale knolls occur irregularly throughout the area. Caespitose cat's-eye is the only special status plant species that is known to occur or is likely to occur in association with Variation 1. Observations made during the field visit did not note presence of the species; however, vegetation communities known to provide suitable habitat for the species were observed in association with Variation 1 (refer to Section G.5.4).

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and crosses the Deerlodge Road on lands administered by the State of Colorado. The dominant terrestrial habitat crossed by Variation 2 consists of Inter-Mountain Basin Juniper Savanna. Intermountain Sagebrush Shrubland and Steppe also is prevalent. BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1-mile of the Variation 2 study area. Occurrence data for the species is derived from field surveys conducted in 1983 as archived by the CNHP. Information regarding specific locations or number of individuals that occur in association with the route variation is not available. However, the relative likelihood of suitable habitat for this species crossed by the route is restrained, as big sagebrush and pinyon juniper vegetation communities associated with sparsely vegetated shale knolls occur irregularly throughout the area. Caespitose cat's-eye is the only special status plant species that is known to occur or is likely to occur in association with Variation 2. Observations made during the field visit did not note presence of the species; however, vegetation communities known to provide suitable habitat for the species were observed in association with Variation 2 (refer to Vegetation Section G.5.4).

G.5.5.3 Environmental Consequences

Alternative WYCO-B (Links C92, C171, C173, and C174)

The types of potential effects on special status plants that could occur under all Project-wide alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.6. The methodology used to assess potential impacts on special status plant resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on special status plants located near the Alternative WYCO-B study corridor. BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1-mile of the routing option study area. The relative likelihood of suitable habitat for this species to be crossed by the route is restrained, as big sagebrush and pinyon-juniper vegetation communities associated with sparsely vegetated shale knolls occur irregularly throughout the area. However, preconstruction surveys for sensitive species would occur in order to identify the presence of special status plants and an appropriate combination of Project design features and selective mitigation measures would be implemented in order to minimize or avoid impacts on the species where identified (refer to Section 3.2.6). After application of mitigation measures, it is not anticipated that individual special status plants would be directly affected by Project activities.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

The types of potential effects on special status plants that could occur under all Project-wide alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.6. The methodology used to assess potential impacts on special status plant resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on special status plants located near the Variation 1 study corridor.

BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1 mile of Variation 1 study area. The relative likelihood of suitable habitat for this species crossed by the route is

restrained, as big sagebrush and pinyon-juniper vegetation communities associated with sparsely vegetated shale knolls occur irregularly throughout the area. However, preconstruction surveys for sensitive species would occur in order to identify the presence of special status plants and an appropriate combination of Project design features and selective mitigation measures would be implemented in order to minimize or avoid impacts on the species where identified (refer to Section 3.2.6). After application of mitigation measures, it is not anticipated that individual special status plants would be directly affected by Project activities. In addition to adherence with regulatory statutes as described in Section 3.2.6, invasive plant prevention guidelines as described in the Dinosaur National Monument Invasive Plant Management Plan and Environmental Assessment, Appendix D, would be followed during construction, operation, and maintenance of the Project on NPS-administered lands (NPS 2005).

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

The types of potential effects on special status plants that could occur under all Project-wide alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.6. The methodology used to assess potential impacts on special status plant resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on special status plants located near the Variation 2 study corridor.

BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1 mile of the Variation 2 study area. The relative likelihood of suitable habitat for this species crossed by the route is restrained, as big sagebrush and pinyon-juniper vegetation communities associated with sparsely vegetated shale knolls occur irregularly throughout the area. However, preconstruction surveys for sensitive species would occur in order to identify the presence of special status plants and an appropriate combination of Project design features and selective mitigation measures would be implemented in order to minimize or avoid impacts on the species where identified (refer to Section 3.2.6.4.3). After application of mitigation measures, it is not anticipated that individual special status plants would be directly affected by Project activities.

G.5.5.4 Summary

The dominant terrestrial habitat crossed by all three routing options consists of Intermountain Sagebrush Shrubland and Steppe with Inter-Mountain Basin Juniper Savanna located on adjacent hillslopes. BLM-sensitive caespitose cat's-eye (*Cryptantha caespitosa*) is known to occur within 1-mile of all three routing options. However, the methodology used to assess potential impacts on special status plant resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on special status plants located near the three routing options. There are no known occurrences of any other special status species. For all route variations, potential impacts on sensitive plants could be reduced or avoided through implementation of Project design features for environmental protection (Table 2-8) and selective mitigation measures (Table 2-13). After application of mitigation measures, it is not anticipated that individual special status plants would be directly affected by Project activities for any of the route variations.

G.5.6 Wildlife

This section describes the existing condition of wildlife resources and analyzes the potential effects on wildlife resources that could result from construction, operation, and maintenance of the Project in the vicinity of the Dinosaur National Monument Deerlodge Road. Wildlife resources discussed in this section include all wildlife species that are not designated as threatened, endangered, or candidates for listing under the ESA; species not listed as sensitive by the U.S. Forest Service (USFS) or BLM; and species not listed as threatened, endangered, or of special concern by the State of Colorado. Analysis of potential

effects on special status wildlife species is contained in Section G.5.7; analysis of potential effects on fish and aquatic resources is contained in Section G.5.7. This analysis tiers to the broader assessment in Section 3.2.7.

Direct effects (those that take place at the same time or in the same location as the Proposed Action) of the Project on wildlife species analyzed could include loss of habitat resulting from ground-disturbing activities, mortality during construction or operation of the Project, disturbance from human presence or construction noise, habitat fragmentation, and dust deposition. Effects such as mortality were considered to be limited to areas where ground disturbance would be proposed or where existing access roads would be used by Project vehicles.

The extent of habitat loss that may occur as a result of construction, operation, and maintenance of the Project was estimated using the best available information from the Applicant to provide an estimate of the extent of potential impacts on wildlife species. Prior to final engineering design of the Project, the location of Project features such as new access roads, upgrades to existing roads, drive-and-crush areas, transmission line structures, and other Project facilities have not been identified. The analysis was completed by estimating the total disturbance in acres due to construction of features such as the Project access network (construction of new roads, upgrades to existing roads, drive-and-crush travel), transmission line structures, and other Project facilities over the entire length of the Alternative WYCO-B. The analysis assumes a constant rate of disturbance per mile of transmission line, which was calculated using the estimated total disturbance and the total length of the transmission line. The rate was then used to estimate the extent of loss of habitat (in acres) that would occur with each specific length of habitat crossed by each routing options. Habitat loss estimates include both permanent and temporary disturbances; therefore representing an overestimate of permanent ground disturbance. Permanent disturbance includes structure-pad areas, communication-regeneration stations, substations and series-compensation stations, and permanent access roads. Temporary disturbance includes structure work areas, wire tensioning/pulling sites, wire splicing sites, multipurpose construction yards, helicopter fly yards, guard structures, and temporary access roads. All areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the Plan of Development (POD).

Noise and associated impacts on wildlife were analyzed based on available information regarding noise transmission and the response of wildlife species. Noise effects would be greatest during the construction phases of the Project. Heavy machinery would be used during the construction phases for access road improvement and construction, construction site preparation, excavation and potential blasting, drilling of concrete piers, and cleanup and site reclamation. Data for the specific level and duration at which noise results in adverse effects on wildlife were not available for most wildlife species. Noise management strategies to reduce disturbance to birds often limit new noise levels to 10 decibels (A-weighted) (dBA) above ambient levels (Nicholoff 2003, Wyoming Executive Order 2011-5). Due to the lack of available information regarding noise thresholds for other wildlife species, this analysis assumes that an increase of 10 dBA over the existing noise floor would potentially result in an adverse effect to all wildlife species that may be present in the Project area. Although detailed construction-noise modeling has not been conducted for this Project, an assumed noise level of 85 dBA from construction activities requiring heavy equipment was used to support a noise analysis in a similar example (BLM and Western Area Power Administration 2014). At 85 dBA, construction activities requiring heavy equipment are anticipated to result in an increased noise floor of more than 10 dBA in areas within of 1 mile of construction activities. Therefore, for this analysis it was assumed that the potential effects of noise on wildlife could occur in any location within 1 mile of the transmission line route. Operation of the transmission line is not anticipated to result in noise levels that would adversely affect wildlife species; therefore, noise associated with operation of the transmission line is not included in this analysis.

Indirect effects (those that take place at a later in time or in a different location than the Proposed Action) of the Project on wildlife species analyzed could include vegetation changes such as altered fire regimes or facilitation colonization by invasive plants, increased recreational access, or altered predator or prey relationships that may alter wildlife dispersal and distribution patterns. The spatial extent or intensity of these indirect effects cannot be quantified at this time; therefore, the potential for these effects to occur is discussed qualitatively where appropriate.

Quantitative data used to analyze the direct effects of the Project on wildlife resources included Colorado Parks and Wildlife (CPW) designated big game habitats and migration corridors. Quantitative information regarding the status and distribution of many other wildlife species likely to occur in the Project area was not available for inclusion in the analysis. For species with limited data available for analysis, a regional qualitative evaluation of the potential occurrence of species in the Project area and potential effects was performed and described in Section 3.2.7.4.1.

G.5.6.1 Local Setting

The three routing options are located in the Colorado Plateau Ecoregion in Moffat County, Colorado. Habitats crossed by the routing options are characterized by arid shrub/shrub-steppe, big sagebrush, and pinyon-juniper vegetation types (Section G.5.4).

The three routing options start on the north side of U.S. Highway 40 and end 6.5 to 7.7 miles southwest on the south side of U.S. Highway 40. Variation 1 parallels the north side of U.S. Highway 40 for 3.8 miles, crosses Deerlodge Road in an area under NPS jurisdiction, continues north of U.S. Highway 40 for 1.9 miles, crosses U.S. Highway 40, and terminates at an existing transmission line corridor after an additional 0.8 mile. Variation 2 parallels the north side of U.S. Highway 40 for 2 miles, turns west for 2 miles, crosses Deerlodge Road on lands administered by the State of Colorado, then turns south, crosses U.S. Highway 40, and ends at an existing transmission line corridor after 3.7 miles. The route of Alternative WYCO-B immediately crosses U.S. Highway 40, runs south for 0.8 mile, and then follows an existing transmission line corridor through the Tuttle Ranch Conservation Easement for 5.7 miles.

All routing options cross severe winter habitat and designated nonlimiting (winter concentration and winter range) habitat for elk, mule deer, and pronghorn (Map G-8). The routing options addressed in this section do not cross big game calving grounds, fawning areas, crucial summer/summer concentration areas, crucial year-long habitat, or migration corridors. Elk severe winter and nonlimiting range in the Project area is the western edge of the largest contiguous area of elk nonlimiting and severe winter range in Colorado. Mule deer critical winter range in the Project area stretches from the Wyoming/Colorado state line along the major river valleys of the Little Snake in Moffat County. Mule deer nonlimiting range in the Project area is the southwestern edge of the largest contiguous mule deer nonlimiting range in Colorado. Pronghorn severe winter range is present on the northern edge of the Project area. Pronghorn nonlimiting range in the Project area is located throughout Moffat County.

The resource inventory and impact levels associated with the three routing options are presented on Map G-8.

G.5.6.2 Affected Environment

Wildlife habitats crossed by the Project include grassland, shrub-steppe, big sagebrush, pinyon-juniper, and wetland (Section G.5.4). A wide range of mammal and reptile species could occur in habitats crossed by the Project. Representative species are discussed in Section 3.2.7. Limited data are available to determine presence and relative abundance of the majority of mammal and reptile species in the Project area or to quantify many of the effects identified in Section 3.2.7.

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B is located south of U.S. Highway 40, and colocated with two existing transmission lines through the Tuttle Ranch Conservation Easement. Dominant wildlife habitats crossed by the route of Alternative WYCO-B are big sagebrush and grasslands dominated by crested wheatgrass, likely seeded following a wildfire, and cheatgrass (Section G.5.4). Wildlife habitats on lands administered by the NPS would not be crossed by Alternative WYCO-B.

The extent of big game severe winter range crossed by the route of Alternative WYCO-B is displayed in Table G-7 and shown on Map G-8. Elk severe winter range is crossed by the entire length of Links C92, C171, C174, and part of Link C173. Mule deer severe winter range is not crossed by the variation. Pronghorn severe winter range is crossed by a portion of Link C92 and a portion of Link C171.

The extent of big game nonlimiting range crossed by Alternative WYCO-B is displayed in Table G-7. Elk and pronghorn nonlimiting range is crossed by the entire length of Alternative WYCO-B. Mule deer nonlimiting range is not crossed by Alternative WYCO-B.

TABLE G-7
ROUTE VARIATION COMPARISON FOR BIG GAME HABITAT

Route Variation	Total Miles Crossed[1]	Big Game Habitat (miles crossed)					
		Elk		Mule Deer		Pronghorn	
		Severe Winter Range	Nonlimiting Range[2]	Severe Winter Range	Nonlimiting Range[2]	Severe Winter Range	Nonlimiting Range[2]
Alternative WYCO-B	6.5	5.0	6.5	0.0	0.0	1.3	6.5
BLM-administered land	*2.1*	*2.1*	*2.1*	*0.0*	*0.0*	*1.1*	*2.1*
Private land	*4.4*	*2.9*	*4.4*	*0.0*	*0.0*	*0.2*	*4.4*
NPS-jurisdiction crossing (Variation 1)	6.5	3.5	3.2	2.7	0.7	1.1	6.5
NPS-administered land	*0.1*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.1*
BLM-administered land	*0.2*	*0.2*	*0.2*	*0.0*	*0.0*	*0.0*	*0.2*
Private land	*6.2*	*3.3*	*3*	*2.6*	*0.7*	*1.1*	*6.2*
State-parcel crossing (Variation 2)	7.7	3.0	3.0	4.3	2.8	1.1	7.7
BLM-administered land	*1.7*	*0.2*	*0.2*	*1.5*	*1.0*	*0.0*	*1.7*
State-administered land	*1.0*	*0.0*	*0.0*	*1.0*	*1.0*	*0.0*	*1*
Private land	*5.0*	*2.8*	*2.8*	*1.8*	*0.8*	*1.1*	*5*

NOTES:
[1]Each of the big game species will not add to the total miles column due to overlapping habitats.
[2]Nonlimiting range includes winter concentration areas and winter range.
BLM = Bureau of Land Management
NPS = National Park Service

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located north of U.S. Highway 40 and crosses Deerlodge Road in an area under NPS jurisdiction. Dominant wildlife habitats crossed by Variation 1 are big sagebrush with sparse juniper cover, as well as grasslands dominated by crested wheatgrass, likely seeded following a wildfire (Section

G.5.4). Wildlife habitats on lands under NPS jurisdiction would be spanned, as Deerlodge Road is the only area under NPS jurisdiction that is crossed by Variation 1.

The extent of big game severe winter range crossed by Variation 1 is displayed in Table G-7 and shown in Map G-8. Elk and mule deer severe winter range is crossed by the entire length of Link C94 and a large portion of Link C93. Pronghorn severe winter range is crossed by a portion of Link C94.

The extent of big game nonlimiting range crossed by Variation 1 is displayed in Table G-7. Elk nonlimiting range is crossed by the entire length of Link C94. Link C93 bypasses elk nonlimiting range except for where it connects to Link C94 and C174. Mule deer nonlimiting range is crossed by Link C93. Link C94 does not cross mule deer nonlimiting range. Pronghorn nonlimiting range is crossed by the entire length of Variation 1.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and crosses Deerlodge Road on lands administered by the State of Colorado. Dominant wildlife habitats crossed by Variation 2 are big sagebrush with juniper on the hillslopes, as well as grasslands dominated by crested wheatgrass, likely seeded following a wildfire (Section G.5.4). Wildlife habitats on lands under NPS jurisdiction are not crossed by Variation 2.

The extent of big game severe winter range crossed by Variation 2 is displayed in Table G-7 and shown on Map G-8. Elk and mule deer severe winter range is crossed by the entire length of Link C94 and a large portion of Link C95. Pronghorn severe winter range is crossed by a portion of Link C94.

The extent of big game nonlimiting range crossed by Variation 2 is displayed in Table G-7. Elk nonlimiting range is crossed by the entire length of Link C94. Link C95 bypasses elk nonlimiting range except for where it connects to Link C94 and C174. Mule deer nonlimiting range is crossed by Link C95. Link C94 does not cross mule deer nonlimiting range. Pronghorn nonlimiting range is crossed by the entire length of Variation 2.

G.5.6.3 Environmental Consequences

Under all action alternatives, disturbance to wildlife habitat through temporary and permanent loss of vegetation and changes in plant assemblages would occur in the Project area. Wildlife habitats affected by the Project include grassland, shrub-steppe, big sagebrush, pinyon-juniper, and wetland (Section G.5.4). The estimated acres of disturbance associated with each habitat type are provided in Table G-6 (Section G.5.4).

Impacts on wildlife species, including birds, mammals, and reptiles would be anticipated for all three routing options. Representative raptor and upland game bird species are discussed in Sections 3.2.7 and 3.2.9. A detailed analysis of impacts on migratory birds is discussed in Section 3.2.9. Direct effects on wildlife species could include loss of habitat or alteration of habitat resulting from ground-disturbing activities during Project construction and maintenance, mortality during construction or operation of the Project, dust, disturbance from human presence or construction noise, habitat fragmentation, and dust deposition.

Vegetation removal, loss, alteration, isolation, or fragmentation of habitat due to road and tower construction would result in temporary or permanent displacement of individuals from occupied habitat. Loss or alteration of wildlife habitat would not occur on lands under NPS jurisdiction as all NPS-administered lands would be spanned by the Project. Adverse impacts could occur on foraging and nesting habitat, particularly for ground-nesting birds, upland game birds, and sagebrush obligate wildlife species.

Potential effects on migratory species include the loss, alteration, or degradation of stop-over habitat, particularly in concentration areas associated with the Yampa River system. Impacts on migratory bird habitat associated with the Yampa River are anticipated to be localized and are not anticipated to affect migratory bird resources in Dinosaur National Monument. All route variations would cross the Yampa River in the same location, outside of the analysis area. Dinosaur National Monument is located approximately 11 miles from the Yampa River crossing. Impacts on birds would be minimized by applying conservation measures (design features of the Proposed Action and selective mitigation measures) to protect nests.

Adverse impacts on mammals and reptiles potentially could be greater for species with limited range, species with low levels of mobility, or species that depend on microclimates for survival. Effects of the Project on species with these characteristics are not anticipated to extend to Dinosaur National Monument. Depending on the variation selected, the Project would be located between 6 and 8 miles from Dinosaur National Monument.

Mortality of birds, including waterfowl and migratory bird species could occur directly due to collisions with the transmission line or towers, although the probability is likely to be a function of bird morphology, behavior and species (Avian Power Line Interaction Committee [APLIC] 2012; Janss 2000). Mortality of birds also could occur through electrocution. Research suggests species at higher risk of mortality from electrocution are raptor species and thermal soarers (Janss 2000). Electrocution risk would be minimized through avian-safe transmission line design that separates energized and grounded structures (APLIC 2006). Increased mortality of mammal and reptile species could occur through collisions with Project construction equipment or vehicles. Risk of mortality or injury is likely to be a function of species morphology and behavior. Mortality of birds, mammals, and reptiles could occur indirectly as a result of increased predation pressure by predators attracted to the transmission line, or through nest abandonment resulting from increased human disturbance, which potentially could reduce fitness, survival, and reproductive performance of some individuals (Riffell et al. 1996).

Increased human presence and noise associated with Project construction, operations, and maintenance activities could increase the potential for disturbance to wildlife. Heavy machinery would be used during the construction phases for access road improvement and construction, construction site preparation, excavation and potential blasting, drilling of concrete piers, and cleanup and site reclamation. All phases of the Project would involve vehicle use, periodically increasing noise levels. Project operation activities would consist of routine inspections and would require access-road use by inspection vehicles. Potential maintenance activities would consist of access-road maintenance and right-of-way vegetation maintenance.

Human presence and construction noise associated with Project construction, operations, and maintenance activities could increase the potential for disturbance to wildlife species dispersing through the Project area. Effects would be greatest during the construction phases of the Project, when human presence, noise, and vehicle use would be substantially greater than other phases of the Project. For the purpose of this analysis, potential effects of noise were assumed to occur where noise levels increased more than 10 dBA above ambient levels, and included all areas within 1 mile of the transmission line route. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of each routing option is displayed in Table G-8.

TABLE G-8
ROUTE VARIATION COMPARISON FOR AREAS POTENTIALLY AFFECTED BY INCREASED NOISE LEVELS OF MORE THAN 10 DECIBELS (A-WEIGHTED)

Route Variation	Total Area within 1 mile of Route Variation Centerline (acres)
Alternative WYCO-B	10,282
NPS-administered land	*0*
BLM-administered land	*3,660*
Private land	*6,598*
State-administered land	*24*
NPS-jurisdiction crossing (Variation 1)	10,302
NPS-administered land	*69*
BLM-administered land	*3,090*
Private land	*159*
State-administered land	*6,984*
State-parcel crossing (Variation 2)	11,723
NPS-administered land	*110*
BLM-administered land	*4,217*
Private land	*637*
State-administered land	*6,760*

NOTES:
BLM = Bureau of Land Management
NPS = National Park Service

Human presence and construction noise effects resulting from construction activities may persist for up to 3 years, the anticipated duration of Project construction, although the majority of Project construction activities are anticipated to be completed within 2 years. Following construction, effects would be limited to periodic disturbance and noise associated with vehicle use and human presence during maintenance and operation activities, including inspections, repairs, and vegetation management and the indirect effects of avoidance of new access roads created for the Project. Operation of the transmission line is not anticipated to result in noise levels that adversely would affect wildlife species.

Birds can respond negatively to the presence of humans and may respond by flushing from nests or roosting sites. Noise has been demonstrated in many studies to have a negative effect on nesting birds. An increased noise floor during periods when a bird is engaging in territory maintenance requires a greater energetic expense to change song pitch or increase song volume (Rheindt 2003; Brumm 2004), potentially decreasing energy available for foraging and feeding young. This can reduce occupancy or reduce productivity on occupied territories (Parris and Schneider 2009; Bayne et al. 2008; Halfwerk et al. 2011). These effects are strongest near the noise source, and additional effects such as behavioral change or hearing loss can occur at very close distances or at the highest noise intensities. Project design features, including avoidance of areas supporting actively nesting birds during the migratory bird nesting season, would minimize the potential effects of increased noise on birds.

The response of mammals to human presence and construction noise could include disruption of species behavioral patterns and displacement during Project construction. Movement of small- and medium-sized species is likely to be restricted (i.e., by limited availability of alternative quality habitat in proximity to occupied habitat affected by the Project). For displaced territorial species, movement patterns and alternative habitat could be restricted by adjacent defended territories (Feldhamer et al. 2003). Wide-ranging species may shift temporal or spatial activity and movement patterns in response to construction noise and the presence of humans and construction equipment (Feldhamer et al. 2003).

Impacts specific to big game species are described below for each route variation.

Alternative WYCO-B (Links C92, C171, C173, and C174)

Based on the impact assessment criteria used in this analysis (refer to Table 3-79 in Section 3.2.7.4.2), residual impacts on big game crucial habitat crossed by the route of Alternative WYCO-B would be low (Table G-9). Impacts primarily would be limited to loss or disturbance of crucial habitats that occurs outside sensitive periods. Low impacts are anticipated due to the application of Selective Mitigation Measures 12 and 15, which would apply seasonal restrictions for construction and maintenance activities in big game crucial habitat and limit public use of access roads where feasible (refer to Section 3.2.7.4.2 for detailed descriptions of selective mitigation measures). In areas where big game crucial habitats are not crossed, no residual impacts were identified using the EIS methods of analysis (Table G-9). Residual impacts from the route of Alternative WYCO-B on big game crucial habitat would be similar to Variation 1 but less than Variation 2. The types of potential effects on big game and other wildlife that could occur under all routing options and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.7.

TABLE G-9
ROUTE VARIATION COMPARISON FOR BIG GAME SPECIES RESIDUAL IMPACTS

Route Variation	Total Miles Crossed	Big Game Crucial Habitat[1] (miles crossed)			
		Nonidentifiable[2]	Low	Moderate	High
Alternative WYCO-B	6.5	1.5	5.0	0.0	0.0
BLM land	*2.1*	*0.0*	*2.1*	*0.0*	*0.0*
Private land	*4.4*	*1.5*	*2.9*	*0.0*	*0.0*
NPS-jurisdiction crossing (Variation 1)	6.5	1.1	5.4	0.0	0.0
NPS-administered land	*0.1*	*0.0*	*0.1*	*0.0*	*0.0*
BLM-administered land	*0.2*	*0.0*	*0.2*	*0.0*	*0.0*
Private land	*6.2*	*1.1*	*5.1*	*0.0*	*0.0*
State-parcel crossing (Variation 2)	7.7	0.8	6.9	0.0	0.0
BLM-administered land	*1.7*	*0.0*	*1.7*	*0.0*	*0.0*
State-administered land	*1.0*	*0.0*	*1.0*	*0.0*	*0.0*
Private land	*5.0*	*0.8*	*4.2*	*0.0*	*0.0*

NOTES:
[1]Includes impacts on elk, mule deer, and pronghorn severe winter range.
[2]Miles are along the reference centerlines where none of the modeled habitats listed in the previous note occur.
BLM = Bureau of Land Management
NPS = National Park Service

The route of Alternative WYCO-B is anticipated to result in 99 acres of total ground disturbance due to construction of Project features. Of the 99 acres of total ground disturbance, 72 acres would consist of temporary disturbance and 27 acres would consist of permanent disturbance. For all routing options, all areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD.

The estimated amount of ground disturbance (in acres) on elk, mule deer, and pronghorn severe winter and nonlimiting range due to construction of Project features along Alternative WYCO-B is presented in Table G-10. Ground disturbance in big game or other wildlife habitats associated with the route of Alternative WYCO-B is not anticipated to occur on lands administered by the NPS. Alternative WYCO-B does not cross any areas under NPS jurisdiction.

TABLE G-10
ROUTE VARIATION COMPARISON FOR BIG GAME HABITAT

Route Variation	Total Disturbance (acres)[1]	Big Game Habitat (acres)					
		Elk		Mule Deer		Pronghorn	
		Severe Winter Range	Nonlimiting Range[2]	Severe Winter Range	Nonlimiting Range[2]	Severe Winter Range	Nonlimiting Range[2]
Alternative WYCO-B	99	76	99	0	0	20	99
BLM-administered land	*32*	*32*	*32*	*0*	*0*	*17*	*32*
State-administered land	*67*	*44*	*67*	*0*	*0*	*3*	*67*
NPS-jurisdiction crossing (Variation 1)	94	51	46	39	10	16	94
NPS-administered land[3]	–	–	–	–	–	–	–
BLM-administered land	*3*	*3*	*3*	*0*	*0*	*0*	*3*
Private land	*89*	*48*	*43*	*38*	*10*	*16*	*89*
State-parcel crossing (Variation 2)	119	46	46	67	43	17	119
BLM-administered land	*26*	*3*	*3*	*23*	*16*	*0*	*26*
State-administered land	*15*	*0*	*0*	*16*	*16*	*0*	*16*
Private land	*77*	*43*	*43*	*28*	*12*	*17*	*77*

NOTES:
[1]Refers to ground disturbance due to construction of Project features.
[2]Includes elk, mule deer, and pronghorn winter concentration and winter range.
[3]No disturbance to big game habitats on NPS-administered lands are anticipated as all lands under NPS-jurisdiction would be spanned by the Project.
BLM = Bureau of Land Management
NPS = National Park Service

The amount of ground disturbance in elk habitat from the route of Alternative WYCO-B would be greater than the other two routing options, but Alternative WYCO-B would not affect mule deer habitat. The amount of big game severe winter and nonlimiting range crossed by the route of Alternative WYCO-B is a relatively small area compared to larger areas of big game sensitive habitat in Moffat County and in Colorado as a whole that are undisturbed by the Project.

The route of Alternative WYCO-B crosses the western edge of elk severe winter range in Colorado, leaving the majority of the approximately 7 million acres of elk severe winter range (located east of the variation) in Colorado and approximately 1 million acres of elk severe winter range in Moffat County unaffected by the Project (CPW 2011). Pronghorn severe winter range is present only on the northern edge of Alternative WYCO-B, leaving the majority of the approximately 1.4 million acres of severe winter range in Colorado and 287,000 acres in Moffat County unaffected (CPW 2012b). Additionally, no big game calving grounds, fawning areas, or crucial year-long habitat are crossed; therefore, Variation 1 is not anticipated to affect big game reproduction.

Big game habitat that would be affected by the route of Alternative WYCO-B is already disturbed to some degree due to its proximity to two existing transmission lines and existing alterations in native-plant-species composition. The route of Alternative WYCO-B parallels existing 345kV and 138kV transmission lines and associated access roads in an area dominated by big sagebrush, crested wheatgrass, and cheatgrass, a non-native annual grass. Although Alternative WYCO-B is not likely to additionally affect habitat quality at a level that would adversely influence the local big game populations, the Tuttle Ranch Conservation Easement is recognized by CPW as containing high-quality winter range and migratory routes for the largest elk and mule deer herds in Colorado, and local pronghorn populations (CPW 2013). The CPW considers big game habitat south of U.S. Highway 40 in the Tuttle Ranch Conservation Easement is of higher value and importance for big game species than habitat north of U.S.

Highway 40 (CPW 2013). However, this analysis demonstrates that none of the three routing options are anticipated to result in significant impacts on big game habitats.

In addition to ground disturbance in big game habitat due to construction of Project features, other effects on big game resulting from Alternative WYCO-B could include displacement or disturbance of big game populations due to noise and human presence during Project construction and maintenance activities. Noise associated with Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Alternative WYCO-B. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of Alternative WYCO-B is displayed in Table G-8. Lands under NPS jurisdiction are not anticipated to be affected by increased noise levels resulting from Alternative WYCO-B. Displacement or disturbance due to noise and human presence is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Project maintenance activities would include inspection of the transmission line three times annually; other maintenance and repairs would occur on an as-needed basis. In addition, seasonal restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied during times that big game are most sensitive or use specific seasonal habitats, further reducing the potentially effects of displacement or disturbance due to noise and human presence.

Long-term impacts from Alternative WYCO-B on big game habitat would be limited to minor loss of forage in seasonal habitat areas (Table G-10), and a potential increase in weeds and human presence and activity in these habitats due to construction of new access routes. Of the 99 acres of total ground disturbance anticipated due to construction of Project features, only 27 acres would consist of permanent disturbance. The remaining 72 acres would be revegetated using an agency-approved species list in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. Long-term impacts on big game habitat are not anticipated to result in reduction of big game populations from current population levels in the Project area or on big game populations in Dinosaur National Monument.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Based on the impact assessment criteria used in this analysis (refer to Table 3-79 in Section 3.2.7.4.2), residual impacts on big game crucial habitat crossed by Variation 1 would be low (Table G-9). Impacts primarily would be limited to loss or disturbance of crucial habitats that occurs outside sensitive periods. Low impacts are anticipated due to the application of Selective Mitigation Measures 12 and 15, which would apply seasonal restrictions for construction and maintenance activities in big game crucial habitat and limit public use of access roads where feasible (refer to Section 3.2.7.4.2 for detailed descriptions of selective mitigation measures). In areas where big game crucial habitats are not crossed, no residual impacts were identified using the EIS methods of analysis (Table G-9). The types of potential effects on big game and other wildlife that could occur along all alternative routes, and the degree to which these effects would be mitigated or avoided, are described in detail in Section 3.2.7.

Variation 1 is anticipated to result in 94 acres of total ground disturbance due to construction of Project features. Of the 94 acres of total ground disturbance, 72 acres would consist of temporary disturbance and 22 acres would consist of permanent disturbance. All areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. The estimated amount of ground disturbance (in acres) on elk, mule deer, and pronghorn severe winter and nonlimiting range due to construction of Project features by Variation 1 is presented in Table G-10. No temporary or permanent ground disturbance to areas under NPS jurisdiction would occur as Variation 1 would span Deerlodge Road and construction of Project features would not be required on NPS-administered lands.

The amount of big game severe winter and nonlimiting range crossed by Variation 1 is a relatively small area compared to larger areas of big game habitat in Moffat County and in Colorado as a whole that are undisturbed by the Project. Variation 1 crosses the western edge of elk severe winter range in Colorado, leaving the majority of the approximately 7 million acres of elk severe winter range (located east of the variation) in Colorado and approximately 1 million acres of elk severe winter range in Moffat County unaffected by the Project (CPW 2011). Mule deer severe winter range crossed by Variation 1 stretches from the Wyoming/Colorado state line along the major river valleys of the Little Snake in Moffat County, totaling approximately 8.1 million acres in Colorado and approximately 751,000 acres in Moffat County (CPW 2012a). Pronghorn severe winter range is present only on the northern edge of Variation 1, leaving the majority of the approximately 1.4 million acres of severe winter range in Colorado and 287,000 acres in Moffat County unaffected (CPW 2012b). Additionally, no big game calving grounds, fawning areas, or crucial year-long habitat are crossed; therefore, Variation 1 is not anticipated to affect big game reproduction.

Big game habitat that would be affected by Variation 1 is already disturbed due to its proximity to U.S. Highway 40 and existing alterations in native plant species composition. Variation 1 parallels U.S. Highway 40 for most of its length in an area dominated by big sagebrush and crested wheatgrass, a non-native grass that was likely seeded following a wildfire. Thus Variation 1 is unlikely to additionally affect habitat quality at a level that would adversely influence the local big game populations.

Variation 1 is anticipated to have less of an impact on big game populations than the route of Alternative WYCO-B because there is already significant human disturbance in the vicinity of the highway and existing transmission lines adjacent to U.S. Highway 40 (CPW 2013). Local big game populations may already be tolerant of, or have adapted to some level of anthropogenic disturbance because big game habitats are located in an area of existing disturbance. Furthermore, CPW considers big game habitats north of U.S. Highway 40 to be of lower value and importance for big game species than habitat south of U.S. Highway 40 (CPW 2013). However, this analysis demonstrates that none of the routing options are anticipated to result in significant impacts on big game habitats.

In addition to ground disturbance in big game habitat due to construction of Project features, other effects on big game resulting from Variation 1 could include displacement or disturbance of big game populations due to noise and human presence during Project construction and maintenance activities. Disruption to species behavioral patterns and an increase in physiological stress from construction noise and activity or routine inspections and maintenance activities also could occur. Noise associated with Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 1. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of Variation 1 is displayed in Table G-8. On lands under NPS jurisdiction, a total of 69 acres potentially could be affected by increased noise levels. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Wildlife resources that cross Deerlodge Road likely already experience some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance due to noise and human presence from Project activities is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Project maintenance activities would include inspection of the transmission line three times annually; other maintenance and repairs would occur on an as-needed basis. In addition, seasonal restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied during times that big game are most sensitive or use specific seasonal habitats, further reducing the potential effects of displacement or disturbance due to noise and human presence.

Long-term impacts from Variation 1 on big game habitat would be limited to minor loss of forage in seasonal habitat areas (Table G-9), and a potential increase in weeds and human presence and activity in

these habitats due to construction of new access routes. Of the 94 acres of total ground disturbance anticipated due to construction of Project features, only 22 acres would consist of permanent disturbance. The remaining 72 acres would be revegetated using an agency-approved species list in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. Long-term impacts on big game habitat are not anticipated to result in reduction of big game populations from current population levels in the Project area or on big game populations in Dinosaur National Monument.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Based on the impact assessment criteria used in this analysis (refer to Table 3-79 in Section 3.2.7.4.2), residual impacts on big game crucial habitat crossed by Variation 2 would be low (Table G-9). Impacts primarily would be limited to loss or disturbance of crucial habitats that occurs outside sensitive periods. Low impacts are anticipated due to the application of Selective Mitigation Measures 12 and 15, which would apply seasonal restrictions for construction and maintenance activities in big game crucial habitat and limit public use of access roads where feasible (refer to Section 3.2.7.4.2 for detailed descriptions of selective mitigation measures). In areas where crucial habitats are not crossed, no residual impacts were identified using the EIS methods of analysis (Table G-9). Residual impacts from Variation 2 on big game crucial habitat would be greater than the other two routing options as a result of its longer length. The types of potential effects on big game and other wildlife that could occur under all alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.7.

Variation 2 is anticipated to result in 119 acres of total ground disturbance due to construction of Project features. Of the 119 acres of total ground disturbance, 86 acres would consist of temporary disturbance and 33 acres would consist of permanent disturbance. All areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. The estimated amount of ground disturbance (in acres) on elk, mule deer, and pronghorn severe winter and nonlimiting range due to construction of Project features by Variation 2 is presented in Table G-10. Ground disturbance in big game or other wildlife habitats associated with Variation 2 would not occur on lands administered by the NPS. Variation 2 does not cross any areas under NPS jurisdiction.

The amount of big game severe winter and nonlimiting range crossed by Variation 2 is a relatively small area compared to larger areas of big game habitat in Moffat County and in Colorado as a whole that are undisturbed by the Project.

Variation 2 crosses the western edge of elk severe winter range in Colorado, leaving the majority of the approximately 7 million acres of severe winter range (located east of the variation) in Colorado and approximately 1 million acres of elk severe winter range in Moffat County unaffected by the Project (CPW 2011). Mule deer severe winter range crossed by Variation 2 stretches from the Wyoming/Colorado state line along the major river valleys of the Little Snake in Moffat County, totaling approximately 8.1 million acres in Colorado and approximately 751,000 acres in Moffat County (CPW 2012a). Pronghorn severe winter range is present only on the northern edge of Variation 2, leaving the majority of the approximately 1.4 million acres of severe winter range in Colorado and 287,000 acres in Moffat County unaffected. Additionally, no big game calving grounds, fawning areas, or crucial year-long habitat are crossed; therefore, Variation 2 is not anticipated to affect big game reproduction.

The CPW considers big game habitats north of U.S. Highway 40 to be of lower value and importance for big game species than habitat south of U.S. Highway 40 (CPW 2013). However, big game habitat that would be affected by Variation 2 is relatively undisturbed compared to the other two route variations. Although Link C94 parallels U.S. Highway 40 in an area dominated by big sagebrush and crested wheatgrass, Link C95 is relatively undisturbed in terms of its native plant species composition and landscape position. Vegetation in this area appears to be characterized by greater native plant species diversity and less disturbed by historic wildfires than links association with the other route variations

(Section 3.2.5). A large portion of Link C95 is located in an area without other major disturbance such as major roads or other transmission lines. Variation 2 would result in an additional parallel disturbance within a relatively short distance to other existing parallel disturbances (i.e., U.S. Highway 40 or the existing transmission line corridor), but is not likely to additionally affect habitat quality at a level that would adversely influence the local big game populations.

In addition to ground disturbance in big game habitat due to construction of Project features, other effects on big game resulting from Variation 2 could include displacement or disturbance of big game populations due to noise and human presence during Project construction and maintenance activities. Noise associated with Project construction activities is anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 2. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of Variation 2 is displayed in Table G-8. On lands under NPS jurisdiction, a total of 110 acres potentially could be affected by increased noise levels. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Wildlife resources that cross Deerlodge Road likely already experience some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance due to noise and human presence from Project activities is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Project maintenance activities would include inspection of the transmission line three times annually; other maintenance and repairs would occur on an as-needed basis. In addition, seasonal restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied during times that big game are most sensitive or use specific seasonal habitats, further reducing the potential effects of displacement or disturbance due to noise and human presence.

Long-term impacts from Variation 2 on big game habitat would be limited to minor loss of forage in seasonal habitat areas (Table G-10), and a potential increase in weeds and human presence and activity in these habitats due to construction of new access routes. Of the 119 acres of total ground disturbance anticipated due to construction of Project features, only 33 acres would consist of permanent disturbance. The remaining 86 acres would be revegetated using an agency-approved species list in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. Long-term impacts on big game habitat are not anticipated to result in reduction of big game populations from current population levels in the Project area or on big game populations in Dinosaur National Monument.

G.5.6.4 Summary

All three routing options cross similar types of wildlife habitats and would have similar types of impacts. Additionally, potential impacts on wildlife resources could be reduced through implementation of Project design features for environmental protection (Table 2-8) and selective mitigation measures (Table 2-13) for all routing options. Differences in impacts on wildlife resources among the three routing options are largely driven by the landscape position of the routing options relative to other existing disturbances.

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B is located south of U.S. Highway 40 and colocated with two existing transmission lines through the Tuttle Ranch Conservation Easement. Elk and pronghorn severe winter and nonlimiting range are crossed by Alternative WYCO-B. Residual impacts on big game crucial range would consist mostly of low impacts. Impacts primarily would be limited to loss or disturbance of crucial habitats that occurs outside sensitive periods. Long-term impacts on big game habitat are not anticipated to result in reduction of big game populations from current population levels in the Project area or on big game populations in Dinosaur National Monument.

Loss of wildlife habitats associated with Alternative WYCO-B would not occur on lands administered by the NPS as Alternative WYCO-B does not cross any areas under NPS jurisdiction. Temporary displacement or disturbance to wildlife species are not anticipated to occur on lands under NPS jurisdiction as a result of increased noise associated with Project construction activities.

Alternative WYCO-B is located approximately 8 miles from Dinosaur National Monument and could indirectly affect wide-ranging wildlife populations in Dinosaur National Monument if habitat loss, mortality, displacement or disturbance resulting from Project activities prevents movement of individuals that otherwise would use habitats in Dinosaur National Monument. However, these effects are anticipated to be minimal as a result of seasonal restrictions on construction and maintenance activities that would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats. In addition, Alternative WYCO-B is not anticipated to present a significant additional barrier to wildlife movement. Alternative WYCO-B is located primarily in a designated utility corridor (on federal land) and adjacent to linear disturbances including U.S. Highway 40 and an existing high-voltage transmission line.

The length of Alternative WYCO-B is the same as Variation 1 and less than Variation 2 and would therefore result in similar residual impacts on big game habitats and overall disturbance (in acres) of wildlife habitats as Variation 1 and less residual impacts on big game habitats and overall ground disturbance (in acres) to wildlife habitats than Variation 2 (Table G-9 and Table G-10). Alternative WYCO-B is anticipated to result in 99 acres of disturbance, compared to 94 acres for Variation 1 and 119 acres for Variation 2. Wildlife habitats adjacent to Alternative WYCO-B already are disturbed, primarily due to their proximity to two existing transmission lines and existing alterations in native plant species composition. However, Alternative WYCO-B would expand the existing disturbed area.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located adjacent to but north of U.S. Highway 40 and crosses the Deerlodge Road in an area under NPS jurisdiction. Elk, mule deer, and pronghorn severe winter and nonlimiting range would be crossed by Variation 1. Residual impacts on big game crucial range would consist mostly of low impacts. Impacts primarily would be limited to loss or disturbance of crucial habitats that occurs outside sensitive periods. Long-term impacts on big game habitat are not anticipated to result in reduction of big game populations from current population levels in the Project area or on big game populations in Dinosaur National Monument.

Loss of wildlife habitats associated with Variation 1 would not occur on lands administered by the NPS as Variation 1 would span the area of Deerlodge Road under NPS jurisdiction. Temporary displacement or disturbance to wildlife species could occur on lands under NPS jurisdiction as a result of increased noise associated with Project construction activities. Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 1 and could affect a total of 69 acres on lands under NPS jurisdiction. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Wildlife resources that cross Deerlodge Road likely already experience some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance from wildlife habitats due to construction noise is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Wildlife mortality associated with bird transmission line collisions, or mammal and reptile collisions with Project construction equipment or vehicles, could occur along Deerlodge Road on lands under NPS-jurisdiction. This potential effect is likely to be minimal as the area crossed under NPS jurisdiction is limited to the width of Deerlodge Road.

Variation 1 is located approximately 8 miles from Dinosaur National Monument and could indirectly affect wide-ranging wildlife populations in Dinosaur National Monument if habitat loss, mortality, displacement or disturbance resulting from Project activities prevents movement of individuals that would otherwise use habitats in Dinosaur National Monument. However, these effects are anticipated to be minimal as a result of seasonal restrictions on construction and maintenance activities that would be applied during times that wildlife are most sensitive or use specific seasonal habitats. In addition, Variation 1 is not anticipated to present a significant additional barrier to wildlife movement. The route would follow the Highway 40 corridor and be concentrated with other development and human disturbance associated with the highway and residences, including existing transmission lines adjacent to U.S. Highway 40.

The length of Variation 1 is the same as Alternative WYCO-B; therefore, the residual impacts on big game habitats and the overall amount of disturbance (in acres) of wildlife habitats is similar to Alternative WYCO-B (Table G-9 and Table G-10). However, Variation 1 is anticipated to have less impact on big game populations than Alternative WYCO-B because there is already significant human disturbance in the vicinity of the highway and existing transmission lines adjacent to U.S. Highway 40.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and crosses Deerlodge Road on lands administered by the State of Colorado. Elk, mule deer, and pronghorn severe winter and nonlimiting range is crossed by Variation 2. Residual impacts on big game crucial range would consist mostly of low impacts. Impacts primarily would be limited to loss or disturbance of crucial habitats that occurs outside sensitive periods. Long-term impacts on big game habitat are not anticipated to result in reduction of big game populations from current population levels in the Project area or on big game populations in Dinosaur National Monument.

Loss of wildlife habitats associated with Variation 2 would not occur on lands administered by the NPS as Variation 2 does not cross any areas under NPS jurisdiction. Temporary displacement or disturbance of wildlife species could occur on lands under NPS jurisdiction as a result of increased noise associated with Project construction activities. Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 1 and could affect a total of 110 acres on lands under NPS jurisdiction. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Wildlife resources that cross Deerlodge Road likely already experience some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance from wildlife habitats due to construction noise is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years.

Variation 2 is located approximately 6 miles from Dinosaur National Monument and could indirectly affect wide-ranging wildlife populations in Dinosaur National Monument if habitat loss, mortality, displacement or disturbance resulting from Project activities prevents movement of individuals that would otherwise use habitats in Dinosaur National Monument. However, these effects are anticipated to be minimal as a result of seasonal restrictions on construction and maintenance activities that would be applied during times that wildlife are most sensitive or use specific seasonal habitats.

The length of Variation 2 is longer than Variation 1 and Alternative WYCO-B and therefore would result in greater residual impacts on big game habitats (Table G-9) and a greater amount of overall ground disturbance to wildlife habitats (in acres) as Variation 1 and Alternative WYCO-B (119 acres versus 94 and 99 acres, respectively; Table G-10). Variation 2 also would result in a novel additional disturbance of wildlife resources as compared to the other route variations because the majority of the route would not

be contiguous with other existing parallel disturbances (i.e., U.S. Highway 40 or the existing transmission line corridor).

G.5.7 Special Status Wildlife

This section describes the existing condition of special status wildlife and analyzes the potential effects on special status wildlife that could result from construction, operation, and maintenance of the Project in the vicinity of the Dinosaur National Monument Deerlodge Road. Special status wildlife include species listed as threatened, endangered, or candidates under the ESA; species listed as sensitive by the USFS or BLM; and species listed as threatened, endangered, or are considered by the State of Colorado to be of special concern. Analysis of potential effects on other wildlife species is provided in Section G.5.5; analysis of potential effects on fish and aquatic resources is contained in Section G.5.8. This analysis tiers to the broader assessment in Section 3.2.8.

Lists of special status species that may occur in the study corridors around the routing options addressed in this document were collected from the FWS (Moffat County), BLM (state level), and CPW. Using the information collected, the full list of special status species was refined to include only species with the potential to occur in the Project area and is presented in Table G-11. Detailed species descriptions, life history, status, and occurrence information for each special status species that may occur in the Project area are included in Appendix J.

TABLE G-11
SPECIAL STATUS WILDLIFE SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Status
Birds		
American peregrine falcon	*Falco peregrinus anatum*	BLM sensitive; state species of special concern
Bald eagle	*Haliaeetus leucocephalus*	BLM sensitive; state species of special concern
Burrowing owl	*Athene cunicularia*	State threatened
Ferruginous hawk	*Buteo regalis*	BLM sensitive; state species of special concern
Greater sage-grouse	*Centrocercus urophasianus*	BLM sensitive; FWS candidate; state species of special concern
Greater sandhill crane	*Grus canadensis tabida*	State species of special concern
Long-billed curlew	*Numenius americanus*	BLM sensitive; state species of special concern
Mountain plover	*Charadrius montanus*	BLM sensitive; state species of special concern
Mammals		
Black-footed ferret	*Mustela nigripes*	FWS endangered (non-essential experimental population); state endangered
Kit fox	*Vulpes macrotis*	BLM sensitive; state endangered
Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	BLM sensitive; state species of special concern
White-tailed prairie dog	*Cynomys leucurus*	BLM sensitive; FWS species of concern
Reptiles		
Midget faded rattlesnake	*Crotalus viridis concolor*	State species of special concern

NOTES:
BLM = Bureau of Land Management
FWS = U.S. Fish and Wildlife Service

Direct effects (those that take place at the same time or in the same location as the Proposed Action) of the Project on special status wildlife species analyzed could include loss of habitat resulting from ground-disturbing activities, mortality during construction or operation of the Project, disturbance from human presence or construction noise, habitat fragmentation, and dust deposition. Effects such as mortality were

considered to be limited to areas where ground disturbance would be proposed or where existing access roads would be used by Project vehicles.

The extent of habitat loss that may occur as a result of construction, operation, and maintenance of the Project was estimated using the best available information from the Applicant to provide an estimate of the extent of potential impacts on special status species. Prior to final engineering design of the Project, the location of Project features such as new access roads, upgrades to existing roads, drive-and-crush areas, transmission line structures, and other Project facilities have not been identified. The analysis was completed by estimating the total disturbance in acres due to construction of features such as the Project access network (construction of new roads, upgrades to existing roads, drive-and-crush travel), transmission line structures, and other Project facilities over the entire length of the Alternative WYCO-B. The analysis assumes a constant rate of disturbance per mile of transmission line, which was calculated using the estimated total disturbance and the total length of the transmission line. The rate was then used to estimate the extent of loss of habitat (in acres) that would occur with each specific length of habitat crossed by each route variation. Habitat loss estimates include both permanent and temporary disturbances; therefore, representing an overestimate of permanent ground disturbance. Permanent disturbance included structure pad areas, communication-regeneration stations, substations and series-compensation stations, and permanent access roads. Temporary disturbance included structure work areas, wire tensioning/pulling sites, wire-splicing sites, multipurpose construction yards, helicopter fly yards, guard structures, and temporary access roads. All areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD.

Noise and associated impacts on special status wildlife was analyzed based on available information regarding noise transmission and the response of special status wildlife species. Noise effects would be greatest during the construction phases of the Project. Heavy machinery would be used during the construction phases for access road improvement and construction, construction site preparation, excavation and potential blasting, drilling of concrete piers, and cleanup and site reclamation. The specific level and duration at which noise results in adverse effects on special status wildlife is not available for most wildlife species. Noise-management strategies to reduce disturbance to birds, including sage-grouse, often limit new noise levels to 10 dBA above ambient levels (Nicholoff 2003, Wyoming Executive Order 2011-5). Due to the lack of available information regarding noise thresholds for other special status wildlife species, this analysis assumes that an increase of 10 dBA over the existing noise floor potentially would result in an adverse effect on all special status wildlife species that may be present in the Project area. Although detailed noise modeling has not been conducted for this Project, an assumed noise level of 85 dBA from construction activities requiring heavy equipment was used to support a noise analysis in a similar example (BLM and Western Area Power Administration 2014). At 85 dBA, construction activities requiring heavy equipment is anticipated to result in an increased noise floor of more than 10 dBA in areas within of 1 mile of construction activities. Therefore, for this analysis it was assumed that the potential effects of noise on special status wildlife could occur in any location within 1 mile of the transmission line route. Operation of the transmission line is not anticipated to result in noise levels that would adversely affect wildlife species; therefore, noise associated with operation of the transmission line is not included in this analysis.

Indirect effects (those that take place at a later in time or in a different location than the proposed action) of the Project on special status wildlife species analyzed could include vegetation changes such as altered fire regimes or facilitation of invasive plants, increased recreational access, or altered predator or prey relationships that may alter wildlife dispersal and distribution patterns. The spatial extent or intensity of these indirect effects cannot be quantified at this time; therefore, the potential for these effects to occur is discussed qualitatively where appropriate.

Detailed analysis of the level of impacts of the Project on special status wildlife species was performed for species for which data were available and identified as potentially present in the study area. Spatial data collected and used in the analysis is identified in Table 3-97. Special status wildlife species known to occur or that may occur in the vegetation communities crossed by the routing options for which data were available included mountain plover, greater-sage grouse, white-tailed prairie dog, and special status raptors.

Quantitative information regarding the status and distribution of many other special status wildlife species likely to occur in the Project area was not available for inclusion in the analysis. For species with limited data available for analysis, a qualitative evaluation of the potential occurrence of species in the Project area and potential effects was performed and described in Section 3.2.8.4.1.

A detailed description of the impact assessment and mitigation planning methodology is described in Section 3.2.8.4.3.

G.5.7.1 Local Setting

The three routing options are located in the Colorado Plateau Ecoregion in Moffat County, Colorado. Habitats crossed by the variations are characterized by arid shrub/shrub-steppe, big sagebrush, and pinyon-juniper vegetation types (Section G.5.4).

The three routing options start on the north side of U.S. Highway 40 and end 6.5 to 7.7 miles southwest on the south side of U.S. Highway 40. Variation 1 parallels the north side of U.S. Highway 40 for 3.8 miles, crosses Deerlodge Road in an area under NPS jurisdiction, continues north of U.S. Highway 40 for 1.9 miles, crosses U.S. Highway 40, and terminates at an existing transmission line corridor after an additional 0.8 mile. Variation 2 parallels the north side of U.S. Highway 40 for 2 miles, turns west for 2 miles, crosses Deerlodge Road on lands administered by the State of Colorado, then turns south, crosses U.S. Highway 40, and ends at an existing transmission line corridor after 3.7 miles. Alternative WYCO-B immediately crosses U.S. Highway 40, runs south for 0.8 mile, and then follows an existing transmission line corridor through the Tuttle Ranch Conservation Easement for 5.7 miles.

Special status wildlife species known to occur or that may occur in the vegetation communities crossed by the routing options include greater sage-grouse, white-tailed prairie dog, mountain plover, and other species including kit fox and burrowing owl listed in Table G-11.

Sage-grouse populations in the Project area are part of the Northwest Colorado population, Management Zone 9. The Northwest Colorado population is estimated around 12,000 birds based on average male sage-grouse lek counts (2,100 to 2,500 individual grouse) between 2000 and 2005 (Northwest Colorado Greater Sage-grouse Working Group 2008). Sage-grouse lek attendance in the Northwest Colorado population increased between 1998 and 2006, and the population was believed to be stable to increasing (Northwest Colorado Greater Sage-grouse Working Group 2008).The population appears to have undergone marked decline since 2008. Large tracts of arid, low-elevation sagebrush and salt-desert habitat in the southwest corner of Moffat County (west of Massadona) became vacant prior to the 1990s. These marginal habitats supported small, widely separated groups of breeding birds. Increased prevalence of cheatgrass and other invasive annual weeds across these shrub-scrub habitats may have contributed substantially to population declines. A single remaining lek at the eastern, higher-elevation margin of this habitat belt has maintained a small but stable number of attending males (FWS 2013).

Highways, housing development, grain farming, unreclaimed oil and gas wells, juniper woodland expansion, and inundation from water-storage projects located in and around sage-grouse habitats have directly and indirectly affected sage-grouse and sage-grouse habitats occupied by the Northwest Colorado population (Northwest Colorado Greater Sage-grouse Working Group 2008). Because of habitat

conditions and connectivity, the population is considered to be at low risk, although southern portions of the population are considered less resilient to stressors than northern portions of the population due to habitat fragmentation and reduced connectivity (FWS 2013). The abundance and distribution of sage-grouse in Management Zone 9 appear to expand and contract commensurate with core population status.

White-tailed prairie dogs are locally common in northwestern Colorado, though plague, management as a pest species, and habitat loss has limited the species distribution and population size.

Black-footed ferrets may occur in the nearby Wolf Creek reintroduction management area. However, reintroduced ferrets in the Wolf Creek management area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012), and the likelihood of ferrets being located in these areas is believed to be very low.

Mountain plovers are known to use disturbed, grassland, and shrubland habitats (Knopf and Miller 1994) in Colorado, though the three variation variations are on the periphery of the species' breeding range and mountain plovers are scarce in those areas (Dinsmore 2003).

The resource inventory and impact levels associated with the three route variations are presented on Map G-9.

G.5.7.2 Affected Environment

Special status wildlife habitats crossed by the three routing options include grassland, shrub-steppe, big sagebrush, pinyon-juniper, and wetland (Section G.5.4). Impacts on these habitats could adversely affect special status wildlife species.

Similar types of impacts on special status wildlife resources associated with the construction, operation, and maintenance of the Project would be anticipated for all action alternatives. Differences in the magnitude and extent of impacts anticipated among individual variations are driven by the type and quantity of special status wildlife resources present along each routing option and the degree that potential effects can be mitigated or avoided.

In addition to the species discussed in detail in this section, a wide range of special status wildlife species could be affected by the alternative routes. The species that may be present in the Project area and may be affected are listed in Table G-11 and described in Section J.6.2 of Appendix J. Limited data are available to determine presence and relative abundance of the many special status wildlife species in the Project area or to quantify many of the types of effects described in Section 3.2.8.4.3. However, effects on these species would be avoided, minimized, and mitigated to the extent practical using the methods described in Section 3.2.8.

Alternative WYCO-B (Links C92, C171, C173, and C174)

Alternative WYCO-B is located south of U.S. Highway 40, and colocated with two existing transmission lines through the Tuttle Ranch Conservation Easement. Dominant special status wildlife habitats crossed by Alternative WYCO-B are big sagebrush and grasslands dominated by crested wheatgrass, likely seeded following a wildfire, and cheatgrass (Section G.5.4). Special status wildlife habitats on lands under NPS jurisdiction are not crossed by Alternative WYCO-B.

Alternative WYCO-B crosses greater sage-grouse priority habitats, general habitats, and habitats within 4 miles of leks in priority habitats (Table G-12 and Map G-10). The numbers of sage-grouse leks within 2, 4, and 11 miles of the variation are presented in Table G-13. Tuttle Ranch Conservation Easement is recognized by the CPW as containing extensive areas of high quality sage-grouse nesting and brood-rearing habitat (CPW 2013). Although the density of sage-grouse on the Tuttle Ranch Conservation

Easement property is relatively low compared to other portions of the Northwest Colorado population, the area provides connectivity between key areas of priority habitat from the Axial Basin to the Blue Mountain area (east to west).

TABLE G-12
ROUTE VARIATION COMPARISON FOR SPECIAL STATUS WILDLIFE (MILES CROSSED)

Route Variation	Total Miles Crossed	Greater Sage-grouse			White-tailed Prairie Dog Potential Colony	Mountain Plover Potential Habitat
		Priority Habitat	General Habitat	Habitat within 4 miles of Leks Located in Priority Habitat		
Alternative WYCO-B	6.5	1.7	4.8	2.8	0.7	0.3
BLM-administered land	*2.1*	*1.5*	*0.6*	*1.1*	*0.2*	*0.0*
Private land	*4.4*	*0.2*	*4.2*	*1.7*	*0.5*	*0.3*
NPS jurisdiction crossing (Variation 1)	6.5	2.7	3.8	3.4	0.0	0.3
NPS-administered land	*0.1*	*0.1*	*0.1*	*0.0*	*0.0*	*0.0*
BLM-administered land	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*
Private land	*6.2*	*2.5*	*3.7*	*3.4*	*0.0*	*0.2*
State parcel crossing (Variation 2)	7.7	3.6	0.9	3.4	0.0	0.0
BLM-administered land	*1.7*	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*
State-administered land	*1.0*	*0.0*	*0.2*	*0.2*	*0.0*	*0.0*
Private land	*5.0*	*3.4*	*0.7*	*3.2*	*0.0*	*0.0*

NOTES:
BLM = Bureau of Land Management
NPS = National Park Service

TABLE G-13
SUMMARY OF SAGE-GROUSE LEK DISTANCES TO ROUTE VARIATION CENTERLINES

Route Variation	Number of Sage-grouse Leks		
	Within 2 Miles	Within 4 Miles	Within 11 Miles
Alternative WYCO-B	0	3	16
National Park Service-jurisdiction crossing (Variation 1)	0	3	16
State-parcel crossing (Variation 2)	0	3	16

Alternative WYCO-B crosses white-tailed prairie dog potential colonies (Table G-12 and Map G-9). Concentrations of known and potential white-tailed prairie dog colonies are located on the Tuttle Ranch Conservation Easement.

Alternative WYCO-B crosses potential mountain plover habitat (Table G-12 and Map G-9). Potential habitat occurs along the majority of the variations considered in Colorado.

No special status raptor nests are known to occur within 1 mile of Alternative WYCO-B. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located north of U.S. Highway 40 and would cross Deerlodge Road in an area under NPS jurisdiction. Dominant special status wildlife habitats crossed by Variation 1 are big sagebrush with sparse juniper cover, as well as grasslands dominated by crested wheatgrass, likely seeded following a wildfire (Section G.5.4). Special status wildlife habitats on lands under NPS jurisdiction would be spanned, as Deerlodge Road is the only area under NPS jurisdiction that would be crossed by Variation 1.

Variation 1 crosses greater sage-grouse priority habitats, general habitats, and habitats within 4 miles of leks in priority habitats (Table G-12 and Map G-10). The numbers of sage-grouse leks within 2, 4, and 11 miles of the variation are presented in Table G-13.

Variation 1 crosses potential mountain plover habitat (Table G-12 and Map G-9). Potential habitat occurs in the majority of the proposed rights-of-way for each of the alternative routes in Colorado.

Variation 1 does not cross white-tailed prairie dog potential colonies. No special status raptor nests are known to occur within 1 mile of Variation 1. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and would cross Deerlodge Road on lands administered by the State of Colorado. Dominant special status wildlife habitats crossed by Variation 2 are big sagebrush with juniper on the hillslopes, as well as grasslands dominated by crested wheatgrass, likely seeded following a wildfire (Section G.5.4). Special status wildlife habitats on lands under NPS jurisdiction are not crossed by Variation 2.

Variation 2 crosses greater sage-grouse priority habitats, general habitats, and habitats within 4 miles of leks in priority habitats (Table G-12 and Map G-10). The numbers of sage-grouse leks within 2, 4, and 11 miles of the variation are presented in Table G-13.

Variation 2 does not cross potential white-tailed prairie dog potential colonies or mountain plover habitat (Table G-12). No special status raptor nests are known to occur within 1 mile of Variation 2. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

G.5.7.3 Environmental Consequences

Under all action alternatives, disturbance of special status wildlife habitat through temporary and permanent loss of vegetation and changes in plant assemblages would occur along the three routing options. Special status wildlife habitats affected by the three routing options include grassland, shrub-steppe, big sagebrush, pinyon-juniper, and wetland (Section G.5.4). The estimated acres of disturbance associated with each habitat type are provided in Table G-6 (Section G.5.4).

Impacts on special status wildlife and special status wildlife habitats would be similar to those described for general wildlife species in Section G.5.6.3. Impacts specific to special status wildlife species for which data were available (i.e., mountain plover, greater sage-grouse, white-tailed prairie dog, and special status raptors) are described below for each route variation.

Alternative WYCO-B (Links C92, C171, C173, and C174)

Based on the impact assessment criteria used in this analysis (refer to Table 3-103 in Section 3.2.8.4.3), residual impacts on special status wildlife and their potential habitats crossed by the route of Alternative WYCO-B would be low and high (Table G-14). Low impacts would be a result of impacts on sage-grouse general habitats and mountain plover potential habitat. Impacts on sage-grouse general habitats and mountain plover potential habitat are considered low because they are anticipated to have only minor adverse effects on the species and would not limit the long-term sustainability of populations. Application of Selective Mitigation Measure 12 (seasonal and spatial wildlife restrictions) would restrict construction and maintenance activities to designated areas and during critical periods to minimize disturbance by limiting human activity, noise and disturbance during sensitive life cycle periods, and reduce the risk of adverse impacts on breeding success and species survival rates. Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and likely would continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

TABLE G-14
ROUTE VARIATION COMPARISON FOR SPECIAL STATUS WILDLIFE RESIDUAL IMPACTS

Route Variation	Total Miles Crossed	Residual Impacts (miles)[1,2]			
		Nonidentifiable[3]	Low	Moderate	High
Alternative WYCO-B	6.5	0.0	3.3	0.0	3.2
BLM-administered land	*2.1*	*0.0*	*0.6*	*0.0*	*1.5*
Private land	*4.4*	*0.0*	*2.7*	*0.0*	*1.7*
NPS-jurisdiction crossing (Variation 1)	6.5	0.0	2.4	0.0	4.1
NPS-administered land	*0.1*	*0.0*	*0.1*	*0.0*	*0.0*
BLM-administered land	*0.2*	*0.0*	*0.0*	*0.0*	*0.2*
Private land	*6.2*	*0.0*	*2.3*	*0.0*	*3.9*
State-parcel crossing (Variation 2)	7.7	3.2	0.0	0.0	4.5
BLM-administered land	*1.7*	*0.0*	*0.0*	*0.0*	*0.2*
State-administered land	*1.0*	*0.0*	*0.0*	*0.0*	*0.2*
Private land	*5.0*	*0.0*	*0.0*	*0.0*	*4.1*

NOTES:
[1]Where multiple special status wildlife species are crossed, the resource with the highest impact-level assignment was reported.
[2]Includes impacts on white-tailed prairie dog, mountain plover, and greater sage-grouse
[3]Miles are along the reference centerlines where none of the modeled habitats listed in the previous note occur.
BLM = Bureau of Land Management
NPS = National Park Service

High residual impacts on special status wildlife resources would be a result of impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats are considered high because these habitat types are considered the most important areas for maintaining individual and statewide sage-grouse populations. While selective mitigation measures (refer to Table 3-104 in Section 3.2.8.4.3) would minimize the potential effects of direct mortality and increased disturbance on sage-grouse, the presence of transmission lines and structures in sage-grouse habitat may increase susceptibility to predation, and habitat fragmentation and displacement are likely to occur due to the tendency of sage-grouse to avoid areas that contain tall structures (refer to Section 3.2.8.4.3 for detailed descriptions of potential effects of the Project on sage-grouse and other special status wildlife species).

Alternative WYCO-B is anticipated to result in 99 acres of total ground disturbance due to construction of Project features. Of the 99 acres of total ground disturbance, 72 acres would consist of temporary disturbance and 27 acres would consist of permanent disturbance. For all three routing options, all areas

subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. The estimated amount of ground disturbance (in acres) on special status wildlife habitats due to construction of Project features by Alternative WYCO-B is presented in Table G-10. Ground disturbance in special status wildlife habitats associated with Alternative WYCO-B would not occur on lands administered by the NPS. Alternative WYCO-B does not cross any areas under NPS jurisdiction.

From where Alternative WYCO-B joins the U.S. Highway 40 corridor to the end of the route variation, Alternative WYCO-B is located primarily in a designated utility corridor and adjacent to linear disturbances including U.S. Highway 40 and an existing high-voltage transmission line that have degraded the quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would minimize sage-grouse habitat loss and fragmentation. The amount of sage-grouse priority habitat and habitat within 4 miles of leks in priority habitat that would be disturbed by Alternative WYCO-B would be less than Variation 1 and Variation 2 (Table G-13). However, the CPW considers sage-grouse habitat on the Tuttle Ranch Conservation Easement to be of higher quality than sage-grouse habitat south of U.S. Highway 40 (CPW 2013).

The amount of white-tailed prairie dog potential colonies that would be disturbed by Alternative WYCO-B would be greater than Variation 1 and Variation 2, as Alternative WYCO-B is the only route variation that crosses white-tailed prairie dog potential colonies (Table G-10). The CPW recognizes the Tuttle Ranch Conservation Easement property as containing some of the highest densities of white-tailed prairie dog colonies anywhere in northwestern Colorado and a potential preferred location for the future release of black-footed ferrets (CPW 2013). Colonies on the property suffered from plague in 2011-12, which resulted in a severe loss of population and precluded release of ferrets on the property.

White-tailed prairie dog colonies are known to be present along the route variation. If present in the right-of-way, injury of white-tailed prairie dogs could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog habitats are located adjacent to existing linear infrastructure and are likely to have previously incurred some of the effects described in Section 3.2.8.

The amount of potential mountain plover habitat that would be disturbed by Alternative WYCO-B would be greater than Variation 1 and Variation 2 (Table G-13). Despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur. Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and likely would continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

In addition to ground disturbance in special status wildlife habitat due to construction of Project features, other effects on special status wildlife resulting from Alternative WYCO-B could include displacement or disturbance of special status wildlife populations due to noise and human presence during Project construction and maintenance activities. Noise associated with Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Alternative WYCO-B. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of Alternative WYCO-B is displayed in Table G-8. Lands under NPS jurisdiction are not anticipated to be affected by increased noise levels resulting from Alternative WYCO-B. Displacement or disturbance due to noise and human presence is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Project maintenance activities would include inspection of the transmission line three times annually; other maintenance and repairs would occur on an as-needed basis. In addition, seasonal restrictions on construction and maintenance

activities (Selective Mitigation Measure 12) would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats, further reducing the potential effects of displacement or disturbance due to noise and human presence.

Raptor nest surveys would be conducted prior to construction to identify any active nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Table 2-13, Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of selective mitigation measures are described in Section 3.2.8.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Based on the impact assessment criteria used in this analysis (refer to Table 3-103 in Section 3.2.8.4.3), residual impacts on special status wildlife and their potential habitats crossed by Variation 1 would be low and high (Table G-14). Low impacts would result from impacts on sage-grouse general habitats and mountain plover potential habitat. Impacts on sage-grouse general habitats and mountain plover potential habitat are considered low because they are anticipated to have only minor adverse effects on the species and would not limit the long-term sustainability of populations. Application of Selective Mitigation Measure 12 (seasonal and spatial wildlife restrictions) would restrict construction and maintenance activities to designated areas and during critical periods to minimize disturbance by limiting human activity, noise and disturbance during sensitive life cycle periods, and reduce the risk of adverse impacts on breeding success and species survival rates. Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and likely would continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

High residual impacts on special status wildlife resources would be due to impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats are considered high because these habitat types are considered the most important areas for maintaining individual and statewide sage-grouse populations. While selective mitigation measures (refer to Table 3-104 in Section 3.2.8.4.3) would minimize the potential effects of direct mortality and increased disturbance on sage-grouse, the presence of transmission lines and structures in sage-grouse habitat may increase susceptibility to predation, and habitat fragmentation and displacement are likely to occur due to the tendency of sage-grouse to avoid areas that contain tall structures (refer to Section 3.2.8.4.3 for detailed descriptions of potential effects of the Project on sage-grouse and other special status wildlife species).

Variation 1 is anticipated to result in 94 acres of total ground disturbance due to construction of Project features. Of the 94 acres of total ground disturbance, 72 acres would consist of temporary disturbance and 22 acres would consist of permanent disturbance. All areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. The estimated amount of ground disturbance (in acres) on special status wildlife habitats due to construction of Project features by Variation 1 is presented in Table G-10. No temporary or permanent ground disturbance to areas under NPS jurisdiction would occur as Variation 1 would span Deerlodge Road and construction of Project features would not be required on NPS lands.

Special status wildlife habitat that would be affected by Variation 1 is already disturbed due to its proximity to U.S. Highway 40 and existing alterations in native plant species composition. Variation 1 parallels U.S. Highway 40 for most of its length in an area dominated by big sagebrush and crested wheatgrass, a non-native grass that was likely seeded following a wildfire. Thus Variation 1 is unlikely to

additionally affect habitat quality at a level that would adversely influence local special status wildlife populations.

In addition to ground disturbance in special status wildlife habitat due to construction of Project features, other effects on special status wildlife resulting from Variation 1 could include displacement or disturbance of special status wildlife populations due to noise and human presence during Project construction and maintenance activities. Disruption of species behavioral patterns and an increase in physiological stress from construction noise and activity or routine inspections and maintenance activities also could occur. Noise associated with Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 1. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of Variation 1 is displayed in Table G-8. On lands under NPS jurisdiction, a total of 69 acres potentially could be affected by increased noise levels. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Special status wildlife resources that cross Deerlodge Road likely already experience some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance due to noise and human presence is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Project maintenance activities would include inspection of the transmission line three times annually; other maintenance and repairs would occur on an as-needed basis. In addition, seasonal restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats, further reducing the potentially effects of displacement or disturbance due to noise and human presence.

Variation 1 is anticipated to have less impact on special status populations than Alternative WYCO-B because there is already significant human disturbance in the vicinity of the highway and existing transmission lines adjacent to U.S. Highway 40 (CPW 2013). Local special status wildlife populations may already be tolerant of, or have adapted to some level of anthropogenic disturbance because special status wildlife habitats are located in an area of existing disturbance. Furthermore, the CPW considers sage-grouse habitats north of U.S. Highway 40 to be of lower value and importance than habitat south of U.S. Highway 40 (CPW 2013).

The amount of sage-grouse priority habitat and habitat within 4 miles of leks in priority habitat that would be disturbed by Variation 1 would be greater than Variation 2 and less than Alternative WYCO-B (Table G-15). However, sage-grouse habitat north of U.S. Highway 40 is constrained geographically by Cross Mountain and the Yampa River, agricultural conversion of sage-grouse habitats, and the presence of pinyon-juniper woodlands, which may restrict or preclude sage-grouse occupancy of available habitat (CPW 2013).

TABLE G-15
ROUTE VARIATION COMPARISON FOR SPECIAL STATUS WILDLIFE (ACRES)

Route Variation	Total Ground Disturbance (acres)[1]	Greater Sage-grouse			White-tailed Prairie Dog Potential Colony	Mountain Plover Potential Habitat
		Priority Habitat	Habitat within 4 miles of Leks located in Priority Habitat	General Habitat		
Alternative WYCO-B	99	26	43	73	11	5
BLM-administered land	*32*	*23*	*17*	*9*	*3*	*0*
Private land	*67*	*3*	*26*	*64*	*8*	*5*
NPS-jurisdiction crossing (Variation 1)	94	39	49	55	0	4
NPS-administered land[2]	–	–	–	–	–	–
BLM-administered land	*3*	*3*	*0*	0	*0*	*1*
Private land	*89*	*36*	*49*	53	*0*	*3*
State-parcel crossing (Variation 2)	119	56	53	14	0	0
BLM-administered land	*26*	*3*	*0*	0	*0*	*0*
State-administered land	*15*	*0*	*3*	3	*0*	*0*
Private land	*77*	*53*	*50*	11	*0*	*0*

NOTES:
[1]Refers to ground disturbance due to construction of Project features.
[2]No disturbance to special status wildlife habitats on NPS-administered lands are anticipated as all lands under NPS-jurisdiction would be spanned by the Project.
BLM = Bureau of Land Management
NPS = National Park Service

Raptor nest surveys would be conducted prior to construction to identify any active nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of selective mitigation measures are described in Section 3.2.8.4.

State-parcel Crossing of Deerlodge Road –Variation 2 (Links C94 and C95)

Based on the impact assessment criteria used in this analysis (refer to Table 3-103 in Section 3.2.8.4.3), residual impacts on special status wildlife and their potential habitats crossed by Variation 2 would be high in areas where special status wildlife habitats are crossed. In areas along Variation 2 that do not cross special status wildlife habitats, no residual impacts were identified using the EIS methods of analysis (Table G-14). High residual impacts on special status wildlife resources would be due to impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats are considered high because these habitat types are considered the most important areas for maintaining individual and statewide sage-grouse populations. While selective mitigation measures (refer to Table 3-104 in Section 3.2.8.4.3) would minimize the potential effects of direct mortality and increased disturbance on sage-grouse, the presence of transmission lines and structures in sage-grouse habitat may increase susceptibility to predation, and habitat fragmentation and displacement are likely to occur due to the tendency of sage-grouse to avoid areas that contain tall structures (refer to Section 3.2.8.4.3 for detailed descriptions of potential effects of the Project on sage-grouse and other special status wildlife species).

High residual impacts from Variation 2 on special status wildlife would be greater than the other two routing options primarily as a result of its longer length. The types of potential effects on special status

wildlife that could occur under all alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.8.

Variation 2 is anticipated to result in 119 acres of total ground disturbance due to construction of Project features. Of the 119 acres of total ground disturbance, 86 acres would consist of temporary disturbance and 33 acres would consist of permanent disturbance. All areas subject to temporary disturbance would be revegetated in accordance with the Project's Reclamation, Revegetation, and Monitoring Plan Framework of the POD. The estimated amount of ground disturbance (in acres) on special status wildlife habitats due to construction of Project features by Variation 2 is presented in Table G-10. Ground disturbance in these habitats associated with Variation 2 would not occur on lands administered by the NPS. Variation 2 does not cross any areas under NPS jurisdiction.

In addition to ground disturbance in special status wildlife habitat due to construction of Project features, other effects on special status wildlife resulting from Variation 2 could include displacement or disturbance of special status wildlife populations due to noise and human presence during Project construction and maintenance activities. Noise associated with Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 2. The total area (in acres) that potentially could be affected by increased noise levels of more than 10 dBA within 1 mile of Variation 2 is displayed in Table G-8. On lands under NPS jurisdiction, a total of 110 acres potentially could be affected by increased noise levels. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Special status wildlife that cross Deerlodge Road likely already experiences some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance due to noise and human presence is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Project maintenance activities would include inspection of the transmission line three times annually; other maintenance and repairs would occur on an as-needed basis. In addition, seasonal restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats, further reducing the potential effects of displacement or disturbance due to noise and human presence.

The CPW considers sage-grouse habitats north of U.S. Highway 40 to be of lower value and importance than habitat south of U.S. Highway 40 (CPW 2013). However, special status wildlife habitat that would be affected by Variation 2 is relatively undisturbed compared to the other two routing options. Although Link C94 parallels U.S. Highway 40 in an area dominated by big sagebrush and crested wheatgrass, Link C95 is relatively undisturbed in terms of its landscape position and native plant species composition. A large portion of Link C95 is located in an area without other major disturbance such as major roads or other transmission lines. Vegetation in this area appears to be characterized by greater native plant species diversity and less disturbed by historic wildfires than links association with the other route variations (Section 3.2.5).

Impacts on sage-grouse associated with Variation 2 occur outside of existing utility corridors and in areas not substantially altered by previous anthropogenic development activities. The amount of sage-grouse priority habitat and habitat within 4 miles of leks in priority habitat that would be disturbed by Variation 2 also would be greater than Variation 1 and Alternative WYCO-B (Table G-15). However, sage-grouse habitat north of U.S. Highway 40 is constrained geographically by Cross Mountain and the Yampa River, agricultural conversion of sage-grouse habitats, and the presence of pinyon-juniper woodlands, which may restrict or preclude sage-grouse occupancy of available habitat (CPW 2013).

Raptor nest surveys would be conducted prior to construction to identify any active nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal

and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of selective mitigation measures are described in Section 3.2.8.4.

G.5.7.4 Summary

All three of the routing options cross similar amounts of special status wildlife habitats and would have similar types of impacts. Additionally, potential impacts on special status wildlife could be reduced through implementation of Project design features for environmental protection (Table 2-8) and selective mitigation measures (Table 2-13) for all routing options. Differences in impacts on special status wildlife resources among the three options are driven largely by the landscape position of the routing options relative to other existing disturbances and differences in the special status wildlife species that may be affected.

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B is located south of U.S. Highway 40 and colocated with two existing transmission lines through the Tuttle Ranch Conservation Easement. White-tailed prairie dog potential colonies, mountain plover potential habitat, and greater sage-grouse priority habitats, general habitats, and habitats within 4 miles of leks in priority habitats would be crossed by Alternative WYCO-B. Residual impacts on special status wildlife would consist mostly of high impacts due to impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. The presence of transmission lines and structures in sage-grouse habitat may increase susceptibility to predation, and habitat fragmentation and displacement are likely to occur due to the tendency of sage-grouse to avoid areas that contain tall structures.

Loss of special status wildlife habitats associated with Alternative WYCO-B would not occur on lands administered by the NPS as Alternative WYCO-B does not cross any areas under NPS jurisdiction. Temporary displacement or disturbance to special status wildlife species are not anticipated to occur on lands under NPS jurisdiction as a result of increased noise associated with Project construction activities.

Alternative WYCO-B is located approximately 8 miles from Dinosaur National Monument and could indirectly affect wide-ranging special status wildlife populations in Dinosaur National Monument if habitat loss, mortality, displacement or disturbance resulting from Project activities on other jurisdictions prevents movement of individuals that would otherwise use habitats in Dinosaur National Monument. However, these effects are anticipated to be minimal as a result of seasonal restrictions on construction and maintenance activities that would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats. In addition, Alternative WYCO-B is not anticipated to present a significant additional barrier to wildlife movement. Alternative WYCO-B is located primarily in a designated utility corridor and adjacent to linear disturbances including U.S. Highway 40 and an existing high-voltage transmission line.

Alternative WYCO-B would result in fewer miles of high residual impacts than Variation 1 or Variation 2 (Table G-14) because fewer miles of sage-grouse priority habitat or habitat within 4 miles of leks in priority habitat are crossed. Existing linear disturbances including U.S. Highway 40 and a high-voltage transmission line have degraded the quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would minimize sage-grouse habitat loss and fragmentation. However, the CPW considers sage-grouse and white-tailed prairie dog habitats south of U.S. Highway 40 to be of higher value than habitats north of U.S. Highway 40 (CPW 2013). Locating additional transmission lines across the Tuttle Ranch Conservation Easement would expand the existing disturbed area and impact more potentially high quality habitat for special status

wildlife resources. Alternative WYCO-B also is the only routing option that would affect white-tailed prairie dog potential colonies (Table G-10).

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located adjacent to but north of U.S. Highway 40 and crosses the Deerlodge Road in an area under NPS jurisdiction. Mountain plover potential habitat, and greater sage-grouse priority habitats, general habitats, and habitats within 4 miles of leks in priority habitats are crossed by Variation 1. Residual impacts on special status wildlife would consist mostly of high impacts due to impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats (Table G-12). Impacts in these habitat types are considered high because they are considered the most important areas for maintaining individual and statewide sage-grouse populations. The presence of transmission lines and structures in sage-grouse habitat may increase susceptibility to predation, and habitat fragmentation and displacement are likely to occur due to the tendency of sage-grouse to avoid areas that have tall structures.

Loss of special status wildlife habitats associated with Variation 1 would not occur on lands administered by the NPS as Variation 1 would span the area of Deerlodge Road under NPS jurisdiction. Temporary displacement or disturbance to special status wildlife species could occur on lands under NPS jurisdiction as a result of increased noise associated with Project construction activities. Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 1 and could affect a total of 69 acres on lands under NPS jurisdiction. However, the area under NPS jurisdiction that could potentially be affected by increased noise levels is Deerlodge Road. Special status wildlife that cross Deerlodge Road likely already experiences some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance from special status wildlife habitats due to construction noise is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years. Special status wildlife mortality associated with bird transmission line collisions, or mammal and reptile collisions with Project construction equipment or vehicles, could occur along Deerlodge Road on lands under NPS-jurisdiction. This potential effect is likely to be minimal as the area crossed under NPS jurisdiction is limited to the width of Deerlodge Road.

Variation 1 is located approximately 8 miles from Dinosaur National Monument and could indirectly affect wide-ranging special status wildlife populations in Dinosaur National Monument if habitat loss, mortality, displacement or disturbance resulting from Project activities prevents movement of individuals that would otherwise use habitats in Dinosaur National Monument. However, these effects are anticipated to be minimal as a result of seasonal restrictions on construction and maintenance activities that would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats. In addition, Variation 1 is not anticipated to present a significant additional barrier to wildlife movement. The route would follow the Highway 40 corridor and be concentrated with other development and human disturbance associated with the highway and residences, including existing transmission lines.

The length of Variation 1 is the same as Alternative WYCO-B; therefore, the residual impacts and overall amount of disturbance to special status wildlife habitats are similar to Alternative WYCO-B. However, Variation 1 is anticipated to have less impact on special status wildlife populations than Alternative WYCO-B because there is already significant human disturbance in the vicinity of the highway and existing transmission lines adjacent to U.S. Highway 40. Furthermore, the CPW considers sage-grouse habitats north of U.S. Highway 40 to be of lower value and importance for sage-grouse than habitat south of U.S. Highway 40 (CPW 2013).

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and would cross Deerlodge Road on lands administered by the State of Colorado. Greater sage-grouse priority habitats, general habitats, and habitats within 4 miles of leks in priority habitats are crossed by Variation 2. Residual impacts on special status wildlife would consist mostly of high impacts due to impacts on sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats (Table G-12). Impacts in these habitat types are considered high because they are considered the most important areas for maintaining individual and statewide sage-grouse populations. The presence of transmission lines and structures in sage-grouse habitat may increase susceptibility to predation, and habitat fragmentation and displacement are likely to occur due to the tendency of sage-grouse to avoid areas that contain tall structures.

Loss of special status wildlife habitats associated with Variation 2 would not occur on lands administered by the NPS as Variation 2 does not cross any areas under NPS jurisdiction. Temporary displacement or disturbance to special status wildlife species could occur on lands under NPS jurisdiction as a result of increased noise associated with Project construction activities. Project construction activities are anticipated to increase ambient noise levels more than 10 dBA up to 1 mile from Variation 1 and could affect a total of 110 acres on lands under NPS jurisdiction. However, the area under NPS jurisdiction that potentially could be affected by increased noise levels is Deerlodge Road. Special status wildlife that cross Deerlodge Road likely already experiences some adverse effects from increased noise levels and human disturbance associated with Deerlodge Road. Additional displacement or disturbance from special status wildlife habitats due to construction noise is likely to be temporary as the majority of Project construction activities are anticipated to be completed within 2 years.

Variation 2 is located approximately 6 miles from Dinosaur National Monument and could indirectly affect wide-ranging special status wildlife populations in Dinosaur National Monument if habitat loss, mortality, displacement or disturbance resulting from Project activities on other jurisdictions prevents movement of individuals that would otherwise use habitats in Dinosaur National Monument. However, these effects are anticipated to be minimal as a result of seasonal restrictions on construction and maintenance activities that would be applied during times that special status wildlife are most sensitive or use specific seasonal habitats.

The length of Variation 2 is longer than Variation 1 and the route of Alternative WYCO-B and therefore would result in greater residual impacts and disturbance to special status wildlife habitats than Variation 1 and Alternative WYCO-B (Table G-14 and Table G-15). Variation 2 would result in an additional parallel disturbance to special status wildlife resources within a relatively short distance because the majority of the route would not be contiguous with other existing parallel disturbances (i.e., U.S. Highway 40 or the existing transmission line corridor). However, the CPW considers sage-grouse habitats north of U.S. Highway 40 to be of lower value than sage-grouse habitats south of U.S. Highway 40 (CPW 2013).

G.5.8 Fish and Aquatic Resources

This section describes the existing condition of fish and aquatic species, including special status fish and aquatic species and analyzes the potential effects on these resources that could result from construction, operation, and maintenance of the Project in the vicinity of the Dinosaur National Monument Deerlodge Road. This analysis tiers to the broader assessment in Section 3.2.10. Special status fish and aquatic species are those federally listed as either endangered, threatened, or candidates for protection under the ESA or those considered sensitive by the BLM and/or state. The NPS Dinosaur National Monument does not maintain an agency-specific list of special status fish and aquatic species, but considers species managed by FWS, BLM, and the State of Colorado in the decision-making process.

The resource inventory and impact levels associated with the three routing options are presented on Map G-6 and G-9 at the end of this appendix.

G.5.8.1 Local Setting

The three routing options addressed in this document are located in the Colorado Plateau Ecoregion, as adapted from *North American Terrestrial Ecoregions—Level III* (Commission for Environmental Cooperation 2011) and the Twelvemile Gulch catchment basin, which flows into the Yampa River as part of the Lower Yampa Subbasin near Cross Mountain (refer to Section 3.2.5).

Aquatic habitats identified in the study corridors include a mixture of streams, ponds, springs, wetlands, and riparian areas that support or have the potential to support aquatic species. These water resources can be grouped into three habitat categories for this analysis: lentic habitats, lotic habitats, and wetland habitats. Lentic and lotic habitats considered in this analysis were derived from the National Hydrography Dataset (NHD) (USGS 2010a). Wetland habitats considered in this analysis consist of a combination of the National Wetlands Inventory (FWS 2012a) and the Southwest Regional GAP land-cover category (SWReGAP) dataset (USGS 2010c). Aquatic habitat types are described in detail in Section 3.2.10.

Aquatic habitats in the study corridors for the routing options addressed in this document are limited. There are two named drainages crossed by the three routing options: (1) Twelvemile Gulch, an intermittent stream that supports wetland vegetation in some areas and (2) Mud Springs Gulch, an intermittent drainage, which does not support wetland vegetation and is a tributary to Twelvemile Gulch. Primarily, aquatic habitat in Twelvemile Gulch is classified North American arid west emergent marsh. The dominant terrestrial habitat adjacent to aquatic habitats consists of Intermountain Sagebrush Shrubland and Steppe. Refer to Appendix J for detailed descriptions of land-cover categories.

Fish species with the potential to occur in the study corridors require a perennial source of water for all or most of their life. Therefore, this analysis assumes that the streams in the route variation study corridor do not directly support fish species. However, intermittent streams could provide habitats for amphibians and invertebrates and Twelvemile Gulch is a tributary to the Yampa River.

The Yampa River is one of the only remaining free-flowing rivers in western Colorado that has not been affected by major dams or water diversions. The river contains designated critical habitat for four federally listed fish species including the bonytail chub (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius,)* razorback sucker (*Xyrauchen texanus*), and humpback chub (*Gila cypha*). Nine BLM and/or state-listed special status fish and amphibian species may occur in association with the Yampa River. Some of these amphibians could occur in wetland habitats associated with Twelvemile Gulch. BLM and/or state-listed special status fish species include the Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*) (unlikely resident of the lower Yampa River), bluehead sucker (*Castostomus discobolus*), flannelmouth sucker (*C. latipinnis*), mountain sucker (*C. platyrhynchus*), plains topminnow (*Fundulus sciadicus*), and roundtail chub (*Gila robusta*). BLM and/or state-listed amphibian species include the boreal western toad (*Bufo boreas boreas*), Great Basin spadefoot toad (*Spea intermontana)*, and northern leopard frog (*Rana pipiens*). Refer to Section 3.2.10.4.1 for detailed information regarding fish and aquatic resources inventory.

G.5.8.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B is located south of U.S. Highway 40 and colocated with an existing 345kV transmission line. The routing option crosses through the Tuttle Ranch Conservation Easement. The routing option makes a total of nine crossings of intermittent streams including but not limited to:

- Three crossings of unnamed tributaries to Mud Springs Gulch in an area with no visible aquatic or riparian habitats, and
- Four crossings of unnamed tributaries to Twelvemile Gulch, two of which are located within 500 feet of small areas of visible wetland vegetation.

Wetland habitats crossed near Alternative WYCO-B are classified as North American arid west emergent marsh. These potential wetlands are located on private property and were not accessible to be visited during the field visit. Based on an interpretation of aerial photography in the area, the wetlands crossed appear to be relatively isolated and it is anticipated that they do not directly support special status fish or other aquatic species. No wetland or aquatic habitats are crossed by this routing option on NPS-administered lands.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located north of U.S. Highway 40 and crosses the Deerlodge Road in an area under NPS jurisdiction. Variation 1 makes a total of 12 crossings of intermittent streams including but not limited to:

- One crossing of Mud Springs Gulch in an area with no visible aquatic or riparian habitats;
- One crossing of an unnamed tributary to Mud Springs Gulch in an area with no visible aquatic or riparian habitats;
- One crossing of Twelvemile Gulch in a location with no visible aquatic or riparian habitats; and
- Two crossings of an unnamed tributary to Twelvemile Gulch with small areas of visible wetland vegetation.

Additionally, Variation 1 is parallel to and located within 500 feet of the unnamed tributary to Twelvemile Gulch for approximately 0.5 mile. The unnamed tributary appears to support wetland vegetation in this area. Wetland habitats crossed by Variation 1 are classified as North American arid west emergent marsh. These potential wetlands are located on private property and were not accessible to be visited during the field visit.

No wetland or aquatic habitats are crossed by Variation 1 on NPS-administered lands. Based on an interpretation of aerial photography in the area, the wetlands crossed appear to be relatively isolated and it is anticipated that they do not directly support special status fish or other aquatic species.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and crosses the Deerlodge Road on lands administered by the State of Colorado. The Variation 2 makes a total of 13 crossings of intermittent streams including but not limited to:

- One crossing of Mud Springs Gulch in an area with no visible aquatic or riparian habitats;
- One crossing of an unnamed tributary to Mud Springs Gulch in an area with no visible aquatic or riparian habitats;
- One crossing of Twelvemile Gulch in a location with small areas of visible wetland vegetation; and
- Two crossings of unnamed tributaries to Twelvemile Gulch with no visible aquatic or riparian habitats.

Wetland habitats crossed by Variation 2 are classified as North American arid west emergent marsh. These potential wetlands are located on lands administered by the State of Colorado and were visited during the field visit (refer to Section G.5.4). It is anticipated that they do not directly support special

status fish or other aquatic species. No wetland or aquatic habitats are crossed by Variation 2 on NPS-administered lands.

G.5.8.3 Environmental Consequences

All routing options addressed are located in the Twelvemile Gulch catchment basin, which flows into the Yampa River. The river contains designated critical habitat for four federally listed fish species. As described in Section 3.2.10, all alternatives would implement measures to avoid and minimize the Project's potential effects on waterbodies and water quality. The Applicant has committed to procuring all water used for the Project from municipal sources, commercial sources, or under a temporary water-use agreement with landowners holding existing water rights and no water would be drafted from the Yampa River. Therefore, it is anticipated that all three routing options would have the same effect on the Yampa River and resources associated with the river, including designated critical habitat. These effects are anticipated to be minimal or undetectable.

Alternative WYCO-B (Links C92, C171, C173, and C174)

The types of potential effects on fish and aquatic resources that could occur under all Project-wide alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.10. The methodology used to assess potential impacts on fish and aquatic resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on fish or aquatic resources located near the Alternative WYCO-B study corridor.

However, Alternative WYCO-B would require nine crossings of intermittent or ephemeral drainages and would be located within 500 feet of visible wetland vegetation in two areas where the route crosses drainages that contain wetland vegetation. These aquatic habitats may support amphibians and invertebrates. Potential effects on these resources and measures that could be used to reduce these impacts are described in detail in Section 3.2.10. After application of mitigation measures, it is not anticipated that aquatic habitats crossed by the routing option would be directly affected by Project activities.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

The types of potential effects on fish and aquatic resources that could occur under all Project-wide alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.10. The methodology used to assess potential impacts on fish and aquatic resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on fish or aquatic resources located near the Variation 1 study corridor.

However, Variation 1 would require 12 crossings of intermittent drainages and would be located within 500 feet of visible wetland vegetation for approximately 0.5 mile. These aquatic habitats may support amphibians and invertebrates. Potential effects on these resources and measures that could be used to reduce these impacts are described in detail in Section 3.2.10. After application of mitigation measures, it is not anticipated that aquatic habitats crossed by the route would be directly affected by Project activities such as cut and fill.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

The types of potential effects on fish and aquatic resources that could occur under all Project-wide alternative routes and the degree to which these effects would be mitigated or avoided are described in detail in Section 3.2.10. The methodology used to assess potential impacts on fish and aquatic

resources for the purpose of interdisciplinary comparison of alternative routes in the EIS did not identify any potential impacts on fish or aquatic resources located near the Variation 2 study corridor.

However, Variation 2 would require 13 crossings of intermittent or ephemeral drainages and would be located within 500 feet of visible wetland vegetation in one area where the route crosses a drainage that contains wetland vegetation. These aquatic habitats may support amphibians and invertebrates. Potential effects on these resources and measures that could be used to reduce these impacts are described in detail in Section 3.2.10. After application of mitigation measures, it is not anticipated that aquatic habitats crossed by the route would be directly affected by Project activities.

G.5.8.4 Summary

All route variations would have the same minor-to-undetectable effects on the Yampa River and associated designated critical habitats.

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B is located south of U.S. Highway 40 and colocated with an existing 345kV transmission line. The routing option crosses through the Tuttle Ranch Conservation Easement. Alternative WYCO-B makes nine crossings of intermittent or ephemeral drainages. Two of these crossings are within 500 feet of locations that support visible wetland vegetation. These features are not known to support sensitive species, but may support invertebrates or amphibians. After application of mitigation measures, it is not anticipated that aquatic habitats crossed by the route would be directly affected by Project activities such as cut and fill.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C93 and C94)

Variation 1 is located north of U.S. Highway 40 and crosses the Deerlodge Road in an area under NPS jurisdiction. Variation 1 makes 12 crossings of intermittent drainages. Two of these crossings are in locations that support visible wetland vegetation. Variation 1 also is within 500 feet of an unnamed drainage that supports wetland vegetation for longer than any of the other route variations. These features are not known to support sensitive species, but may support invertebrates or amphibians. After application of mitigation measures, it is not anticipated that aquatic habitats crossed by the route would be directly affected by Project activities such as cut and fill.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 is located north of U.S. Highway 40 and crosses the Deerlodge Road on lands administered by the State of Colorado. Variation 2 makes 13 crossings of intermittent drainages. One of these crossings is within 500 feet of a location that supports visible wetland vegetation. This feature is not known to support sensitive species, but may support invertebrates or amphibians. After application of mitigation measures, it is not anticipated that aquatic habitats crossed by the route would be directly affected by Project activities such as cut and fill.

G.5.9 Land Use Resources

G.5.9.1 Local Setting

The area consists mainly of open, rolling topography with some rural development. Although the majority of the land has been leased for grazing or oil and/or gas development, there are a few existing residential properties located near the Deerlodge Road.

The resource inventory and impact levels associated with the three routing options are presented on Maps G-11 through G-14 at the end of this appendix.

G.5.9.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

Existing Land Use

The route of Alternative WYCO-B crosses grazing lands but no other existing land uses. This routing option parallels the Bears Ears to Bonanza 345kV transmission line and the Hayden to Artesia 138kV transmission line. There is a communication facility within the 2-mile-wide study corridor of this routing option.

Authorized Land Use

The route of Alternative WYCO-B does not cross any authorized projects nor are there any authorized projects within the 2-mile-wide study corridor of this routing option.

Future Land Use

The route of Alternative WYCO-B parallels the proposed route of the TransWest Express transmission line for the entire length of this routing option. There are no other future facilities planned at this time within the 2-mile-wide study corridor of this routing option.

Planned Land Use

The route of Alternative WYCO-B crosses the Moffat County agriculture general zone. There are no other Moffat County general zones that the Project crosses nor are there any areas of general zone within the 2-mile-wide study corridor of this routing option.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Existing Land Use

Variation 1 crosses grazing lands, but no other existing land uses. There are two residential properties within the 2-mile-wide study corridor of Variation 1.

Authorized Land Use

Variation 1 does not cross an authorized development and there are no other authorized projects in the 2-mile-wide study corridor of Variation 1.

Future Land Use

Variation 1 parallels the proposed route of the TransWest Express transmission line for the majority of the length of this Variation 1. There are no other future facilities planned at this time within the 2-mile-wide study corridor of Variation 1.

Planned Land Use

Variation 1 crosses the Moffat County agriculture general zone. There are no other general zones that Variation 1 crosses nor are there any general zones within the 2-mile-wide study corridor of Variation 1.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Existing Land Use

Variation 2 crosses grazing lands, but no other existing land uses; however, there is a residential property that would be within the Project right-of-way. There is an additional residential property and agricultural lands within the 2-mile-wide study corridor of Variation 2.

Authorized Land Use

Variation 2 crosses an authorized oil and/or gas development at Link C95; no other authorized projects are within the 2-mile-wide study corridor of Variation 2.

Future Land Use

Variation 2 parallels the route of the proposed TransWest Express transmission line for the majority of the length of Variation 2. There are no other future facilities planned at this time within the 2-mile-wide study corridor of Variation 2.

Planned Land Use

Variation 2 crosses the Moffat County agriculture general zone. There are no other Moffat County general zones that Variation 2 crosses nor are there any general zones within the 2-mile-wide study corridor of Variation 2.

G.5.9.3 Environmental Consequences

Alternative WYCO-B (Links C92, C171, C173, and C174)

Existing Land Use

No residual impacts on existing land uses have been identified along the route of Alternative WYCO-B. The centerline of the proposed transmission line parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines; however, the proposed transmission line would be sited to avoid affecting these two existing transmission lines and their rights-of-way.

Authorized Land Use

No residual impacts on authorized land uses have been identified along the route of Alternative WYCO-B.

Future Land Use

No identifiable residual impacts on future land uses are anticipated along Alternative WYCO-B. This routing options parallels the proposed route of the TransWest Express transmission line for majority of the length of this routing option; however, potential colocation of these two proposed transmission-line projects has been evaluated and the projects would be compatible from a land-use perspective.

Planned Land Use

The route of Alternative WYCO-B crosses the Moffat County agriculture general zone, requiring a conditional use permit for the Project to be located on these lands managed by Moffat County.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Existing Land Use

No high or moderate residual impacts on existing land uses are anticipated along Variation 1; however, the centerline of Variation 1 crosses grazing lands. The Project would be sited to mitigate of avoid affecting grazing infrastructure (e.g., water tanks, fencing); areas disturbed during construction would be reclaimed.

It should be noted though that the NPS Director's Order No. 53, directs that the NPS can issue a right-of-way grant only "…if there is no practicable alternative to such use of NPS lands." The proposed transmission line would span Deerlodge Road, so no permanent infrastructure would affect the NPS road. However, the effects of habitat disruption from construction and visual impairment and noise from the construction and presence of the transmission may have long-term cumulative impacts and are evaluated in the applicable section of this appendix.

Authorized Land Use

No identifiable residual impacts on authorized land uses have been identified along Variation 1.

Future Land Use

Variation 1 parallels the proposed route of the TransWest Express transmission line for majority of the length of this routing option; however, potential colocation of these two proposed transmission-line projects has been evaluated and the projects would be compatible from a land-use perspective.

Planned Land Use

Variation 1 crosses the Moffat County agriculture general zone, requiring a conditional use permit for the Project to be located on these lands managed by Moffat County.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Existing Land Use

Variation 2 crosses 0.2 mile of moderate residual impacts on residential property within 250 feet of the proposed centerline. There are no high residual impacts on existing land use. Impacts on residential property would be mitigated through tower placement and spanning sensitive features.

Authorized Land Use

There would be no high or moderate residual impacts on authorized land uses; however, there would be 1.0 mile of low residual impacts on authorized oil and/or gas developments crossed by the Variation 2. The Project would be sited to avoid crossing extraction sites.

Future Land Use

Variation 2 parallels the proposed route of the TransWest Express transmission line for the majority of the length of Variation 2; however, potential colocation of these two proposed transmission-line projects has been evaluated and the projects would be compatible from a land-use perspective.

Planned Land Use

Variation 2 crosses the Moffat County agriculture general zone, requiring a conditional use permit for the Project to be located on these lands managed by Moffat County.

G.5.9.4 Summary

For all three routing options, impacts on existing, authorized, future, and planned land uses would be mitigated to the greatest extent practicable. The majority of impacts on existing land uses would be on grazing lands, where Variation 1 would cross near an existing residential property. The effects on authorized, future, and planned land uses would be minimal.

As noted previously in this section, the NPS Director's Order #53, directs that the NPS can issue a right-of-way grant only "…if there is no practicable alternative to such use of NPS lands." The Project would span Deerlodge Road, so no permanent infrastructure would affect the NPS road. However, the effects of habitat disruption from construction, visual impairment and noise from construction and from presence of the transmission line may have long-term cumulative impacts and are evaluated in the applicable sections of this appendix.

G.5.10 Parks, Preservation, and Recreation Resources

The resource inventory and impact levels associated with the three routing options are presented on Map G-15 at the end of this appendix.

G.5.10.1 Local Setting

Dinosaur National Monument is the major recreation opportunity in this area; recreation activities occur in and around the monument. Deerlodge Road provides access to the monument's recreation areas including trails, camp sites, and access to the Green River.

G.5.10.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B crosses at Link C174 and there is Semi-Primitive Motorized /Front/Middle Country recreation opportunity spectrum area managed by the BLM Little Snake Field Office within the 2-mile-wide study corridor of Alternative WYCO-B.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 crosses at Link C93 and there is Semi-Primitive Motorized /Front/Middle Country recreation opportunity spectrum area managed by the BLM Little Snake Field Office within the 2-mile-wide study corridor of Variation 1. As discussed in Section 3.2.12, attendance at Dinosaur National Monument has declined between 2013 and 2014, but the use of Deerlodge Road has increased. Recreation users use the kiosk at the entrance of the monument located on Deerlodge Road to identify recreation areas such as camp sites, river access points, and trails farther inside the Monument.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 crosses at Link C95 and there is Semi-Primitive Motorized /Front/Middle Country recreation opportunity spectrum area managed by the BLM Little Snake Field Office in the 2-mile-wide study corridor of Variation 1. As discussed in Section 3.2.12, attendance at Dinosaur National Monument has declined between 2013 and 2014, but the use of Deerlodge Road has increased. Recreation users use the kiosk located at the entrance of Deerlodge Road to identify recreation areas such as camp sites, river access points, and trails farther inside the Monument.

G.5.10.3 Environmental Consequences

Impacts Common to All Action Alternatives

There are no residual impacts on parks, preservation, or recreation resources identified along any of the three routing options. The Semi-Primitive Motorized /Front/Middle Country recreation opportunity spectrum area that the three routing options cross does not restrict the development of utilities. Specific construction and maintenance impacts on recreation resources are discussed under the discussion for each routing option.

Alternative WYCO-B (Links C92, C171, C173, and C174)

Along the route of Alternative WYCO-B, would be no short or long-term impacts on the recreation resources in and around Dinosaur National Monument.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

The proposed transmission line would span Deerlodge Road, so no permanent infrastructure would affect the NPS road. Short-term impacts on recreation resources may result from closed or restricted access to recreation sites and noise from machinery on Deerlodge Road during construction of the Project. Wildlife may be affected temporarily. Long-term effects on recreation resources could include habitat disruption from construction and visual impairment and noise from during construction and from presence of the proposed transmission line. These effects are evaluated further in the applicable sections of this appendix.

It should be noted though that the NPS Director's Order No. 53, directs that the NPS can issue a right-of-way grant only "…if there is no practicable alternative to such use of NPS lands."

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

The proposed transmission line would span (Deerlodge Road, so no permanent infrastructure would affect the NPS road. Short-term impacts on recreation resources may result from closed or restricted access to recreation sites and noise from machinery on Deerlodge Road during construction of the Project. Wildlife may be affected temporarily. Long-term effects on recreation resources could include habitat disruption from construction and visual impairment and noise during construction and from presence of the transmission line. These effects are evaluated further in the applicable sections of this appendix.

It should be noted though that the NPS Director's Order No. 53, directs that the NPS can issue a right-of-way grant only "…if there is no practicable alternative to such use of NPS lands."

G.5.10.4 Summary

Effects on parks, preservation, and recreation resources would be minimal. Because of the presence of the existing transmission lines, the Tuttle Ranch Conservation Easement variation would have fewer impacts

on Dinosaur National Monument. No recreation sites on Deerlodge Road would be directly affected; visual impacts on recreation users are discussed in Section 3.2.18.

As stated previously in this section, the NPS Director's Order No. 53, directs that the NPS can issue a right-of-way grant only "…if there is no practicable alternative to such use of NPS lands." The proposed transmission line would span Deerlodge Road, so no permanent infrastructure would affect the NPS road. However, the effects of habitat disruption from construction and visual impairment and noise during construction and from the presence of the transmission may have long-term cumulative impacts and are evaluated in the applicable sections of this appendix.

G.5.11 Congressional Designation, Special Designations and Other Management Areas

The resource inventory and impact levels associated with the three routing options are presented on Map G-16 at the end of this appendix.

G.5.11.1 Local Setting

The only congressional designation located in this area is Dinosaur National Monument. The special designation and other management areas protect habitat for wildlife. These are located east and south of Deerlodge Road in the Dinosaur National Monument.

G.5.11.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B crosses at Link C173 along the Tuttle Ranch Conservation Easement for 3.0 miles, with no other congressional designations, special designations or other management areas within the 2-mile-wide study corridor of Alternative WYCO-B.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 crosses Deerlodge Road, owned in fee by the NPS and is part of the Dinosaur National Monument. The proposed transmission line would span Deerlodge Road, so no permanent infrastructure would affect the NPS road.

No other congressional designations, special designations, and other management areas; however, the Tuttle Ranch Conservation Easement is located within the 2-mile-wide study corridor of Variation 1.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 does not congressional designations, special designations, and other management areas; however, the Tuttle Ranch Conservation Easement is located within the 2-mile-wide study corridor of Variation 2.

G.5.11.3 Environmental Consequences

Alternative WYCO-B (Links C92, C171, C173, and C174)

There would be no short or long-term impacts on the recreation resources in and around Dinosaur National Monument in addition to the impacts common to all alternatives.

The route of Alternative WYCO-B crosses 3.0 miles of moderate impacts where Link C173 crosses the Tuttle Ranch Conservation Easement. Terms of the agreement for the Tuttle Ranch Conservation Easement prohibit building or installing any new overhead utilities, including electrical transmission lines, without approval from the State of Colorado. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 crosses Deerlodge Road, owned in fee by the NPS and is part of the Dinosaur National Monument. By applying mitigation for a maximum span across Deerlodge Road (Selective Mitigation Measures 7 and 9), direct impacts on the road could be mitigated. A kiosk is located along the north side of Deerlodge Road when turning from Colorado State Highway 40. The kiosk provides information on directions to the Yampa River for rafters, campgrounds, trails, general park information, etc. Recreation-user data for Deerlodge Road and the Dinosaur National Monument is discussed in Section 3. 2.12. Although recreation sites may not be affected by the Project, recreation users experience when using the Deerlodge Road may be affected. The visual effects on recreational users are discussed in Section 3.2.18.

It should be noted though that the NPS Director's Order No. 53, directs that the NPS can issue a right-of-way grant only "…if there is no practicable alternative to such use of NPS lands."

Any applicable National Environmental Policy Act of 1969 (NEPA) and/or cultural resource analysis would need to be completed prior to granting right-of-way. Right-of-way could be granted only if there are no practicable alternatives to such use of NPS lands. Refer to Section 3.2.18 for discussion of visual impacts on Deerlodge Road from the Project.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 crosses no congressional designations, special designations, or other management areas. The proposed transmission line would span Deerlodge Road, so no permanent infrastructure would affect the NPS road. However, during construction, habitat may be disrupted and wildlife may be temporarily affected. Visual impairment and noise during construction and from the presence of the transmission line infrastructure may have long-term cumulative impacts and are evaluated in applicable sections of this appendix. A kiosk is located along the north side of Deerlodge Road when turning from Colorado State Highway 40. The kiosk provides information on directions to the Yampa River for rafters, campgrounds, trails, general park information, etc. Recreation user data for Deerlodge Road and Dinosaur Monument is discussed in Section 3. 2.12. Although recreation sites may not be affected by the Project, recreation users experience when using the Deerlodge Road may be affected if the Project crosses Deerlodge Road. The visual effects on recreational users are discussed in Section 3.2.18. Effects of noise are discussed in Section G.5.16.

G.5.11.4 Summary

Variation 2 is the only variation that would not affect a congressional designation, special designation, or other management area. For the Deerlodge Road crossing, the proposed transmission line would span Deerlodge Road, so no permanent infrastructure would affect the NPS road. However, the effects of habitat disruption during construction, and visual impairment and noise during construction and from the presence of the transmission line may have long-term cumulative impacts and are evaluated in applicable sections of this appendix. Per NPS Director's Order No. 53, which directs that the NPS can issue a right-of-way grant only "if there is no practicable alternative to such use of NPS lands."

G.5.12 Lands with Wilderness Characteristics

The resource inventory and impact levels associated with the three routing options are presented on Map G-17 at the end of this appendix.

G.5.12.1 Local Setting

There are inventoried lands with wilderness characteristics managed by the BLM Little Snake Field Office located to the southeast of Dinosaur National Monument.

G.5.12.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

The Crooked Wash unit (Unit 41) is 13,391 acres and contains many high ridges with pinyon-juniper breaking up the unit with grassland valleys below. The unit is shaped like a large "U" with varying widths. The interior of the unit allows for solitude and opportunities for solitude. A road does cross the left side of the unit. Due to the size of the unit, there are outstanding opportunities of solitude and primitive and unconfined type of recreation, including off-road driving, camping hiking, and wildlife observation, with hunting as the major recreational activity in the unit. This unit was inventoried in 2012; management of the Crooked Wash unit has not been analyzed through a land-use planning process.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 does not cross any lands with wilderness characteristics but there are lands with wilderness characteristics located in the 2-mile-wide study corridor of Variation 1.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

The Twelvemile Mesa unit (Unit 38) is 10,238 acres and contains many high ridges with pinyon-juniper breaking up the unit with grassland valleys below. The unit is shaped like a large "U" with varying widths. The interior of the unit allows for naturalness and opportunities for solitude. A road does cross the west side of the unit. Due to the size of the unit, there are outstanding opportunities of solitude and primitive and unconfined type of recreation including off-road driving, camping hiking, and wildlife observation, with hunting as the major recreational activity in the unit. This unit was inventoried in 2012; management of the Crooked Wash unit has not been analyzed through a land-use planning process.

G.5.12.3 Environmental Consequences

Alternative WYCO-B (Links C92, C171, C173, and C174)

The route of Alternative WYCO-B crosses the western portion of the Crooked Wash unit, (removing approximately 20 acres for the Project right-of-way and a portion of the unit to the northeast of the Project). The remaining portion of the unit would still meet the 5,000-acre size requirement, but the northeastern portion would not. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the unit. Long-term effects from the Project would be the reduced size of the unit and the influences of the Project infrastructure, including the vertical prominence of transmission structures, on the area's wilderness characteristics. This unit was inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Variation 1 would not affect any lands with wilderness characteristics.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Variation 2 crosses the eastern portion of the Twelvemile Mesa unit, (removing approximately 45 acres for the Project right-of-way and a portion of the unit to the east of the Project). The western portion of the unit would still meet the 5,000-acre size requirement, but the eastern portion would not. Short-term effects from the Project on the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the unit. Long-term effects from the Project would be the reduced size of the unit and the influences of the Project infrastructure, including the vertical prominence of transmission structures, on the area's wilderness characteristics. This unit was in inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

G.5.12.4 Summary

Variation 1 would cross the Twelvemile Mesa unit. The route of Alternative WYCO-B would cross the Crooked Wash unit. The Twelvemile Mesa and Crooked Wash units are managed by the BLM Little Snake Field Office. These units were inventoried in 2012 and have not been through a planning process.

G.5.13 Transportation and Access

G.5.13.1 Local Setting

Federal, state, and local transportation and access facilities and systems are located throughout the Project area, including roadways, airports and aviation facilities, and railroad facilities. Transportation facilities were identified and evaluated for potential impacts from the Project, where transportation facilities were crossed by the routing options. Roadways also were identified for the potential to be used for construction, operation, and maintenance of the Project.

G.5.13.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

Along the route of Alternative WYCO-B, Link C92 crosses U.S. Highway 40 approximately 2 miles northeast of Deerlodge Road.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Along Variation 1, Link C93 crosses Deerlodge Road near its intersection with U.S. Highway 40 and crosses U.S. Highway 40 approximately 2 miles southwest of the intersection. The links also parallels and is in proximity to U.S. Highway 40.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Along Variation 2, Link C95 crosses Deerlodge Road approximately 1.5 miles northwest of its intersection with U.S. Highway 40 and crosses U.S. Highway 40 approximately 2 miles southwest of the intersection. Link C94 also parallels and is in proximity to U.S. Highway 40.

G.5.13.3 Environmental Consequences

Impacts Common to All Action Alternatives

For construction of the transmission line, improvement of existing access and new road construction for the Project would be expected to increase traffic (i.e., the number of daily trips) on the regional roadway network. The increase in daily trips would occur primarily in the mornings and evenings due to construction workers commuting to and from the worksite. Increases in daily trips would be less apparent on existing primary transportation routes (e.g., U.S. Highway 40).

Construction of the Project would be implemented in three distinct construction spreads as described in Section 2.4.6, Construction Elements. Generally, Spread 1 would include construction of the Project in Wyoming and Colorado. Spread 2 would include the eastern portions of Utah, generally from the Utah/Colorado border westward to the Wasatch Plateau. Spread 3 would include the construction of the Project in central Utah.

As discussed in Section 3.2.22.5.1, Spread 1 is anticipated to have the largest peak of workers (263 workers) over a period of 8 months (from months 15 to 22 of a 32-month construction schedule anticipated to conclude in December 2020). The proposed phased approach for construction (refer to Section 2.4.6) would likely require workers/crews to be spread throughout the geographic area of Spread 1. Assuming workers commuting to and from work sites would average 2.5 workers per vehicle, an additional (approximate) 210 daytrips (i.e., 105 morning trips and 105 evening trips) on the existing roadway network would be anticipated during the 8-month construction period. The additional vehicles would be concentrated in the vicinity of the Project right-of-way throughout the Wyoming and Colorado portions of the Project area. Because of the size of the construction spread and existing access available in Wyoming and Colorado, it is not anticipated that the additional daytrips from workers commuting to and from the work site would create significant impacts on the existing roadway network in Wyoming and Colorado.

Increased traffic and/or congestion on the existing roadway network throughout the Project area could occur from slow moving, oversized loads of materials and/or construction equipment being delivered to multi-purpose construction yards. From the multi-purpose construction yards, materials and equipment would be dispersed where needed on the access roads identified and approved in the POD. It is anticipated that the multi-purpose construction yards would be located near existing roadways that can support oversized loads. Also, it is anticipated that congestion would be minimal and safety procedures, to be outlined in the POD (i.e., temporary signage alerting drivers, flaggers, pilot trucks/escorts), would be followed to limit the potential of accidents. The potential for the greatest congestion could occur throughout the Project area in the spring in 2019 through the summer of 2020 (refer to Section 3.2.22.5.1 of Social and Economic Conditions). However, it is anticipated that deliveries and/or the transportation of construction equipment would be staggered during working hours of the work week when congestion on roadways is less likely to occur.

Throughout the life of the Project, the access roads required for the operation and maintenance of the transmission line would need to be maintained in accordance with the Applicant's and/or agencies' maintenance standards. Existing access that would be improved to meet the requirements of the Project, could require agencies' responsible for maintenance of the improved existing access to maintain these roads to a higher standard than maintained previously. New access developed for the Project typically would be done under the assumption that new access would be used by only the Applicant's personnel for purposes associated with the Project. It is anticipated that these new access roads would be maintained by the Applicant but also would likely need to be incorporated into the agencies' travel management plans. The new access has the potential to increase access into areas previously inaccessible through unauthorized off-highway vehicle (OHV) use. The unauthorized access would have the potential for

additional administrative considerations for agencies (i.e., additional enforcement, signage, disturbance and sensitive features, etc.). Through the application of selective mitigation measures to limit unauthorized access, it is anticipated minimal impact would occur.

G.5.13.4 Summary

Impacts on transportation and access resources are similar for all three routing options.

G.5.14 Visual Resources

The resource inventory and impact levels associated with the three routing options are presented on Maps G-18 through G-21 at the end of this appendix.

G.5.14.1 Local Setting

The landscapes adjacent to the Deerlodge Road entrance of Dinosaur National Monument contain characteristics of both the Wyoming Basin physiographic province and the Uinta Basin section of the Colorado Plateaus physiographic province since they are located at the transitional area between these provinces. The windswept rolling steep and hogback ridges of the Wyoming Basin become more dissected, display a greater diversity of soil colors, and show an increased density of pinyon-juniper vegetation.

Unlike the portion of the Uinta Basin physiographic section farther to the west, this area contains limited industrial development except for two large-scale transmission lines that roughly parallel U.S. Highway 40. Other cultural modifications in the area include agricultural development and scattered residences.

The primary viewing locations in this area include Deerlodge Road and recreation kiosk at the east entrance to Dinosaur National Monument, the Yampa Valley Trail, dispersed residences, and U.S. Highway 40. These viewers are located on privately owned property, a state-administered parcel on Deerlodge Road, scattered BLM-administered parcels, and NPS-administered lands adjacent to Deerlodge Road.

G.5.14.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

Scenery

The route of Alternative WYCO-B crosses mostly Class C scenery associated with the rolling steppe and sagebrush hills landscape characteristic of the Wyoming Basin physiographic province. A small portion of Class B scenery is crossed, which is associated with a series of ridges rising toward Wapiti Peak to the south. These landscapes have been modified by two existing transmission lines and U.S. Highway 40, which locally dominates the landscape character. A total of 0.7 mile of Class B scenery and 5.8 miles of Class C scenery are crossed by Alternative WYCO-B.

Viewing Locations

A few dispersed residences, with high-concern viewers, are located in proximity to U.S. Highway 40 and Deerlodge Road that would have views of the Project approximately 1.5 miles away. Other high-concern viewers associated with Dinosaur National Monument, including the recreation kiosk, Deerlodge Road, and Yampa Valley Trail, would have views of the Project from approximately 1 to 3 miles away in an area where the Project is located adjacent to two existing transmission lines. Refer to Figure G-1 for the

viewshed displaying the extent of visibility of the Project within Dinosaur National Monument (shown in blue).

Similarly, moderate-concern viewers traveling on U.S. Highway 40, Moffat County Road 85, and Pinyon Ridge Road (an unimproved road) would have views of the Project adjacent to these existing transmission lines except for the crossing of U.S. Highway 40, located approximately 4 miles east of Deerlodge Road, where the Project would not be located adjacent to these linear landscape modifications.

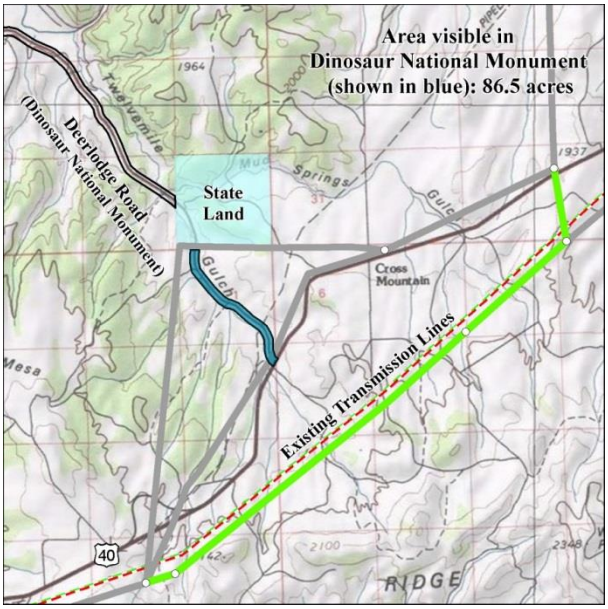

Figure G-1 Visibility of Alternative WYCO-B in Dinosaur National Monument

Federal Agency Visual Management Objectives

The route of Alternative WYCO-B crosses 1.6 miles of BLM-administered land with all 1.6 miles in Visual Resource Management (VRM) Class III within the Little Snake Field Office.

No NPS-administered lands are crossed by Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

The route of Alternative WYCO-B crosses the Cedar Springs Scenic Quality Rating Unit (SQRU) (Class C) in the Little Snake Field Office and the Pinyon Ridge SQRU (Class B) in the White River Field Office.

Alternative WYCO-B crosses the Danford Sensitivity Level Rating Unit (SLRU) (low sensitivity) in the Little Snake Field Office and the Elk Springs SLRU (low sensitivity) in the White River Field Office.

Alternative WYCO-B crosses the BLM foreground-middleground distance zone and Visual Resource Inventory (VRI) Class IV.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Scenery

Variation 1 crosses Class B scenery associated with the dissected hills, containing patches of pinyon-juniper vegetation, between Twelvemile Gulch and Twelvemile Mesa. To the east, Variation 1 crosses Class C scenery similar to the landscapes described for Alternative WYCO-B. These landscapes have been modified locally by U.S. Highway 40, adjacent to where the Project would be located, and two existing transmission lines farther to the south. A total of 2.5 miles of Class B scenery and 4.0 miles of Class C scenery are crossed by Variation 1.

Viewing Locations

A few dispersed residences, with high-concern viewers, are located in proximity to U.S. Highway 40 and Deerlodge Road with views of the Project from less than 0.5 mile away. Views of the Project from the Deerlodge Road recreation kiosk (in Dinosaur National Monument) would occur from less than 500 feet away adjacent to U.S. Highway 40. Refer to Figure G-2 for the viewshed displaying the extent of visibility of the Project within Dinosaur National Monument (shown in blue). High-concern viewers on the Yampa Valley Trail would have views of the Project from approximately 1.5 miles away. Moderate-concern viewers on U.S. Highway 40 would have views of the Project for approximately 6 miles where this Variation 1 parallels the highway. Moffat County Road 85, and associated moderate-concern viewers, would have views of the Project crossing the road immediately north of U.S. Highway 40 approximately 1.5 miles east of Deerlodge Road.

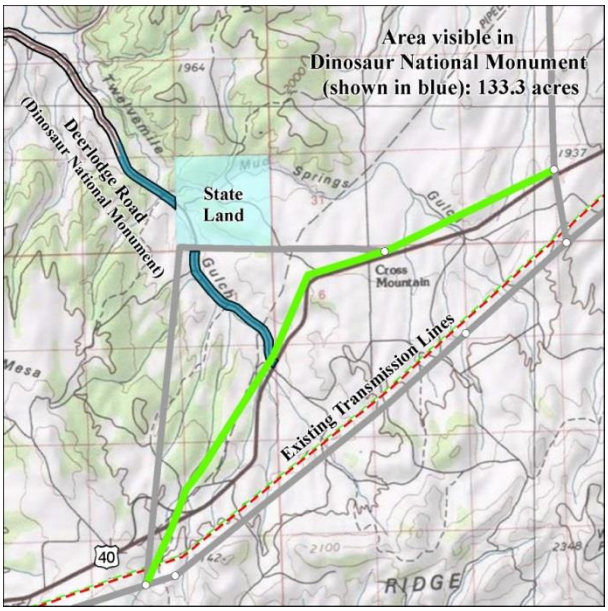

Figure G-2 Visibility of the Variation 1 in Dinosaur National Monument

Federal Agency Visual Management Objectives

No BLM-administered lands are crossed by this Variation 1. Variation 1 crosses Deerlodge Road within the 1,000-foot-wide scenic easement established in the 1987 General Management Plan for Dinosaur National Monument to protect visual qualities of the road's rangeland character and precludes all future surface mineral activity, including oil and gas extraction.

Bureau of Land Management Visual Resource Inventory Components

Variation 1 crosses the Twelvemile Mesa SQRU (Class B) and Cedar Springs SQRU (Class C) in the Little Snake Field Office and the Pinyon Ridge SQRU (Class B) in the White River Field Office.

Variation 1 crosses the Danford SLRU (low sensitivity) and Godiva/Greystone SLRU (moderate sensitivity) in the Little Snake Field Office and the Elk Springs SLRU (low sensitivity) in the White River Field Office.

Variation 1 crosses the BLM foreground-middleground distance zone and VRI Classes III and IV.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Scenery

Variation 2 crosses Class B associated with dissected hills, containing patches of pinyon-juniper vegetation, between Twelvemile Gulch and Twelvemile Mesa. The portion of these landscapes crossed by the Project occurs where there are limited modifications except for scattered ranching operations, which produce a rural landscape character. Farther to the east, the Project crosses Class C similar to the landscapes described for Alternative WYCO-B. In this area, the Class C landscapes have been modified locally by U.S. Highway 40, adjacent to where the Project is located, and two existing transmission lines further to the south. A total of 3.6 miles of Class B scenery and 4.1 miles of Class C scenery are crossed by Variation 2.

Viewing Locations

A few dispersed residences, with high-concern viewers, are located in in proximity to Deerlodge Road and U.S. Highway 40 with views of the Project from less than 0.5 mile away. Views from Deerlodge Road would occur in an area with limited modifications, except for the aforementioned ranching operations, approximately 1.5 miles north of the entrance from U.S. Highway 40. By being located farther to the north, views of the Project from the Deerlodge Road kiosk would be from approximately 1.5 miles away. Refer to Figure G-3 for the viewshed displaying the extent of visibility of the Project within Dinosaur National Monument (shown in blue). High-concern viewers on the Yampa Valley Trail would have views of the Project from approximately 0.5 mile away where the trail crosses Deerlodge Road. Moderate-concern viewers on U.S. Highway 40 would have views of the Project for approximately 2 miles where this route variation parallels the highway. Moffat County Road 85, and associated moderate-concern viewers, would have views of the Project crossing the road immediately north of U.S. Highway 40 approximately 1.5 miles east of Deerlodge Road.

Federal Agency Visual Management Objectives

Variation 2 crosses 1.5 miles of BLM-administered land with all 1.5 miles in VRM Class III within the Little Snake Field Office.

No NPS-administered lands are crossed by Variation 2 (the crossing of Deerlodge Road occurs in land administered by the State of Colorado).

Bureau of Land Management Visual Resource Inventory Components

Variation 2 crosses the Twelvemile Mesa SQRU (Class B) and Cedar Springs SQRU (Class C) in the Little Snake Field Office and the Pinyon Ridge SQRU (Class B) in the White River Field Office.

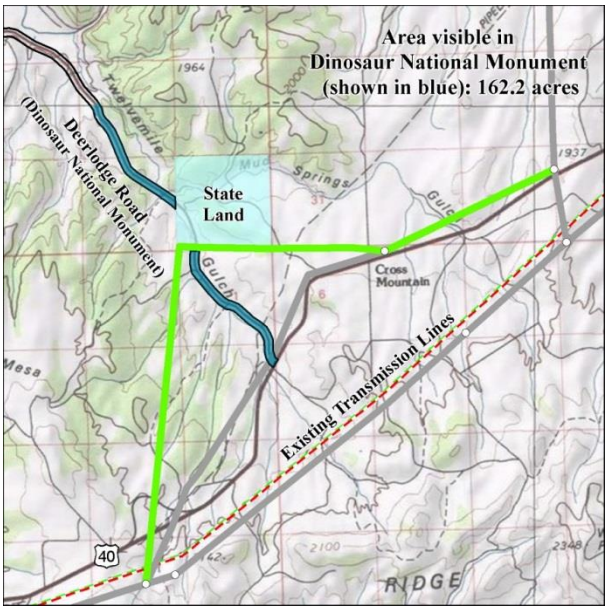

Figure G-3 Visibility of the Variation 2 in Dinosaur National Monument

Variation 2 crosses the Danford SLRU (low sensitivity) and Godiva/Greystone SLRU (moderate sensitivity) in the Little Snake Field Office and the Elk Springs SLRU (low sensitivity) in the White River Field Office.

Variation 2 crosses the BLM foreground-middleground distance zone and VRI Classes III and IV.

G.5.14.3 Environmental Consequences

Impacts Common to All Action Alternatives

The introduction of the Project would result in long-term effects on visual resources including the degradation of scenery through the presence of vertical elements in the landscape (transmission line structures), areas of cleared vegetation (right-of-way vegetation clearing), and exposed soil from the construction of new permanent access roads, tower work areas, and other ancillary facilities. Long-term impacts on viewing locations also would occur through the introduction of the Project into these viewers' viewshed and in particular, where the setting is largely visually intact.

Short-term effects on both scenery and viewing locations would be increased as a result of construction efforts as well as the additional areas of disturbance associated with construction before reclamation of these temporary work areas occur. These effects include views of additional areas of exposed soil, the presence and movement of construction equipment, and the associated construction activities (e.g., tower construction, stringing).

For a more detailed assessment of impacts on recreation and the overall experience of visitors to Dinosaur National Monument, refer to Section G.5.10. The residual impacts on scenery, high-concern viewers, and moderate-concern viewers for the Deerlodge Road area are presented in Table G-16.

TABLE G-16
ALTERNATIVE ROUTE COMPARISON FOR VISUAL RESOURCES RESIDUAL IMPACTS FOR THE DEERLODGE ROAD AREA

Alternative Route	Total Miles	Residual Impacts (miles)									
		Scenery				High Concern Viewers			Moderate Concern Viewers		
		High	Moderate	Low	Not Identifiable	High	Moderate	Low	High	Moderate	Low
Alternative WYCO-B	6.5	0.0	0.0	6.5	0.0	0.0	0.0	6.5	0.0	0.2	6.3
National Park Service-jurisdiction crossing (Variation 1)	6.5	0.0	0.0	6.5	0.0	2.4	2.9	1.2	0.0	5.7	0.8
State-parcel crossing (Variation 2)	7.7	0.0	3.7	4.0	0.0	3.6	3.0	1.1	0.0	5.0	2.7

Alternative WYCO-B (Links C92, C171, C173, and C174)

Scenery

Alternative WYCO-B would result in low impacts on the Class B and Class C landscapes crossed since the Project directly parallels two existing transmission lines, which locally dominate the existing setting. By being located adjacent to these other linear modifications, the incremental change introduced by the Project, including transmission structures, earthwork, and right-of-way vegetation clearing, would be similar to existing modifications in the landscape.

Viewing Locations

Due to the colocation with the existing transmission lines, views of the Project from Deerlodge Road (including the recreation kiosk), Dinosaur National Monument, and U.S. Highway 40 would be altered minimally since the Project would be located farther from the viewer than these existing transmission lines. In other words, views of the Project would be through the two existing transmission lines reducing the noticeability of the Project. For additional analysis, refer to the contrast rating worksheet for key observation point (KOP) #150 and the associated visual simulation in Appendix M.

Federal Agency Visual Management Objectives

Due to the colocation with the two existing transmission lines, the level of contrast introduced by the Project would be compliant with VRM Class III objectives in the Little Snake Field Office.

No NPS-administered lands would be crossed.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-B would affect scenic quality locally through the introduction of additional cultural modifications, adjacent to similar modifications, within SQRUs including the Cedar Springs and Pinyon Ridge SQRUs. These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing, construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape. No Class A SQRUs would be influenced by the Project since the

closest Class A landscape, Cross Mountain Canyon, is located more than 5 miles away and is an enclosed landscape with limited views of adjacent landscapes.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Scenery

Variation 1 would result in low impacts on the Class B and Class C landscapes crossed since the Project parallels U.S. Highway 40, which has locally modified the landscape character, and is located in proximity to two existing transmission lines, which also have modified the area's landscape character. The incremental change introduced by the Project would be apparent but would not considerably modify the overall character of these landscapes.

Viewing Locations

High impacts would occur on unobstructed views from a residence along U.S. Highway 40 where the Project is located within 0.5 mile and on views from a residence adjacent to Deerlodge Road located 0.75 away from the Project. High impacts also are anticipated on views from Deerlodge Road and the recreation kiosk, both located in Dinosaur National Monument, since the Project would be viewed from less than 500 feet away where transmission structures would dominate views from this portion of the monument. Due to the proximity of the Project to these viewers, there are limited selective mitigation measures that would substantially decrease the Project dominance of these views, other than crossing the road in a different location. Additionally, areas of geometrically cleared vegetation in the Project right-of-way would expand the area viewed as modified from this viewpoint. To reduce contrast on geometric vegetation right-of-way clearing, selective mitigation measures would be applied to reduce contrast through minimizing the extent of this clearing and the geometric form produced through this Project activity. For additional analysis, refer to the contrast rating worksheet for KOP #150 and the associated visual simulation in Appendix M.

Moderate impacts are anticipated on views from U.S. Highway 40 due to the long-duration views, approximately 6 miles, where Variation 1 parallels the highway at a distance between 500 feet and 0.5 mile. Due to the proximity of the Project to this highway, there are limited selective mitigation measures that would substantially decrease the impacts on these views other than locating the Project farther to the north. Contrast introduced by areas of geometrically cleared vegetation in the right-of-way would be reduced through minimizing the extent of vegetation clearing and the resulting geometric forms as described above.

Federal Agency Visual Management Objectives

No BLM-administered lands would be crossed.

Variation 1 crosses the 1,000-foot-wide scenic easement along Deerlodge Road and include the introduction of geometric right-of-way and structure pad vegetation clearing, construction access roads, and transmission structures within this easement. The scenic easement could be spanned by the proposed transmission line; therefore, no transmission structures would be located within the easement, but vegetation clearing, construction access roads, and conductors spanning the road would still occur in the easement. Also, high impacts on views from Deerlodge Road would occur from Project features located outside of the scenic easement, influencing visual qualities along the road including its rangeland character.

Bureau of Land Management Visual Resource Inventory Components

Variation 1 would affect scenic quality locally through the introduction of additional cultural modifications, within the SQRUs adjacent to U.S. Highway 40 including the Twelvemile Mesa, Cedar Springs, and Pinyon Ridge SQRUs. These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing, construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape. No Class A SQRUs would be influenced by the Project since the closest Class A landscape, Cross Mountain Canyon, is located approximately 3.5 miles away and is an enclosed landscape with limited views of adjacent landscapes.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Scenery

Variation 2 would result in moderate impacts on Class B landscapes since there are limited modifications currently in these areas and the Project would introduce formal hard-edge geometry into rolling landscapes including right-of-way vegetation clearing. Additionally, the Project would include construction of access roads and tower pads in steep terrain, requiring additional earthwork that would produce stronger visual contrast. In areas where the Project would be constructed on ridgelines, contrast would increase based on strong geometric vertical lines (transmission structures) as compared to the rolling, sinuous lines associated with the topography. In areas of dense pinyon-juniper vegetation crossed by the Project, selective mitigation measures would be applied to reduce the geometric form generated by right-of-way vegetation clearing. Additionally on steep terrain, selective mitigation measures would be applied to reduce ground disturbance associated with the construction of access roads.

Due to the more level terrain present in Class C landscapes crossed, and additional influence from U.S. Highway 40 and the existing transmission lines, low impacts are anticipated on the Class C landscapes crossed.

Viewing Locations

Impacts on residences are similar to those described for Variation 1.

High impacts also are anticipated on views from Deerlodge Road, from both NPS- and state-administered lands, as visitors drive north toward Deerlodge Park. Motorists on Deerlodge Road would have their views dominated by the Project, especially within 0.5 mile of the road, as transmission structures would be located adjacent to the road and viewed in a skylined condition in an area with limited cultural modifications. Selective mitigation measures would be applied to reduce contrast, including minimizing the extent of right-of-way vegetation clearing to reduce the geometric form generated in pinyon-juniper vegetation and maximize the span between transmission line structures, where the road would be crossed, to reduce the visual dominance of the structures. For additional analysis, refer to the contrast rating worksheets for KOPs #331(southbound) and #332 (northbound) and the associated visual simulation from KOP #331 in Appendix M.

Impacts on views from the Yampa Valley Trail would be similar to those described from Deerlodge Road since the trail crosses Deerlodge Road within 0.5 mile of the Project. As the trail enters Mud Springs Gulch, there would be views of skylined structures on the ridge to the south, which would become partially screened as recreationists approach Deerlodge Road. At this intersection, viewers would again have their views dominated by skylined structures on ridges on both the west and east side of the road. For additional analysis, refer to the contrast rating worksheet for KOP #331 and the associated visual simulation in Appendix M.

Impacts on views from U.S. Highway 40 would be similar to those described for Variation 1 except these impacts would occur for a shorter duration, 1.5 miles for Variation 2 instead of 6 miles for Variation 1.

Federal Agency Visual Management Objectives

Based on the contrast rating assessment from KOP #331 on Deerlodge Road, the level of contrast introduced by the Project would be compliant with VRM Class III objectives in the Little Snake Field Office.

No NPS-administered lands are crossed.

Bureau of Land Management Visual Resource Inventory Components

Variation 2 would affect scenic quality locally through the introduction of additional cultural modifications within the SQRUs adjacent to U.S. Highway 40 including the Cedar Springs and Pinyon Ridge SQRUs, with a greater effect on the Twelvemile Mesa SQRU as the Variation 2 alignment is located farther from U.S. Highway 40 and other cultural modifications. These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing, construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape. No Class A SQRUs would be influenced by the Project since the closest Class A landscape, Cross Mountain Canyon, is located approximately 2.5 miles away and is an enclosed landscape with limited views of adjacent landscapes.

G.5.14.4 Summary

In regard to the impacts on viewing locations and scenery, as well as compliance with federal agency visual management objectives, Alternative WYCO-B would be least impactful due to the colocation with two existing transmission lines, which reduces the incremental visual contrast introduced by the Project. Specifically, views from Deerlodge Road, the recreation kiosk, and Dinosaur National Monument, in general, would be modified minimally by the Project due to these existing modifications.

Variation 1 would introduce substantially increased impacts on Deerlodge Road and especially the recreation kiosk, due to the proximity to these viewing locations. Variation 2 would cross the road farther to the north, on a state-administered parcel of land, where motorists also would experience high impacts on their views. The key difference between the impacts on Deerlodge Road from the two different route variations is in regard to existing modifications and experience. The recreation kiosk near U.S. Highway 40 is located adjacent to the highway and has views of two existing transmission lines approximately 1 mile away, whereas the area farther to the north is largely intact with a rangeland character. In regard to experience, views of Variation 2 would occur farther from these existing modifications, and closer to the larger portion of the monument, but in an area where viewers would be traveling along a roadway and would not necessarily stop to view the landscape. Recreationists stopping at the kiosk would have much longer-duration views of the Project resulting from Variation 1 since it is a designated place to stop with a small parking lot and informational signage. It is important to note in regard to the overall experience along Deerlodge Road, a ridge approximately 2 miles north of U.S. Highway 40 visually separates the area where these different route variations occur from an area of stronger rangeland character and the larger portion of the monument, as well as Cross Mountain Canyon and its associated river takeout (refer to Figures G-2 to G-1).

In regard to meeting the purpose of the scenic easement along Deerlodge Road, Alternative WYCO-B minimizes effects on both NPS-administered lands as well as the experience along Deerlodge Road.

Variation 1 would cross the easement within NPS-administered lands and would dominate views from the recreation kiosk, whereas Variation 2 would cross the road in a state-administered parcel, which is not part of the scenic easement, but would highly impact the experience of visitors to this portion of Dinosaur National Monument.

G.5.15 Cultural Resources

G.5.15.1 Cultural Setting

A discussion of the prehistory, history, and cultural development of the Project area is presented in Section 3.2.20.3. The portion of the Project under study is located in the Northern Colorado Plateau cultural area, a highly dynamic region that reflects a long and prolific account of archaeological, ethnological, and historical investigation (Jennings 1957; Steward 1938, 1940). Section 3.2.20.3 presents the chronology for the Northern Colorado Plateau cultural area and outlines the archaeological evidence of the prehistoric groups that inhabited this portion of the Project area. Additionally, a general historic overview of northwestern Colorado is presented at the end of the section.

G.5.15.2 Affected Environment

Alternative WYCO-B (Links C92, C171, C173, and C174)

A total of 14 cultural resource sites were identified in the Class I inventory conducted for this portion of Alternative WYCO-B. Sites consist of 11 prehistoric sites, 2 historic sites, and 1 multi-component site (prehistoric and historic components). Of the sites, 86 percent (n=12) are in the low cultural resource intensity zone (outside of the Project area of potential effect [APE]); 7 percent (n=1) are in the moderate cultural resource intensity zone (outside of, but adjacent to, the boundary of the Project APE); and 7 percent (n=1) are in the high cultural resource intensity zone (in the Project APE). Sites in the low cultural resource intensity zone include 5 prehistoric lithic and artifact scatters, 4 prehistoric campsites, 1 prehistoric thermal feature, 1 historic campsite, and the Old Victory Highway. The site in the moderate cultural resource intensity zone is a prehistoric campsite with a historic component (depression of unknown function and associated trash scatter). The site in the Project APE is a prehistoric lithic scatter. An unrecorded segment of the Old Victory Highway is crossed by Link C92.

There are no National Register of Historic Places (NRHP)-listed properties, National Historic Trails (NHT) or potential NHTs, National Historic Landmarks (NHL), traditional cultural properties (TCP), or Areas of Critical Environmental Concern (ACEC) with cultural components along Alternative WYCO-B. The Old Victory Highway is a visually sensitive cultural resource along this variation.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Class I sites potentially affected by Variation 1 are similar to those identified for Alternative WYCO-B, except for three additional sites in the low cultural resource intensity zone. The differences in the number and type of sites occur along Link C93. Sites identified along this route variation, but not along Alternative WYCO-B, include two prehistoric lithic procurement areas and one prehistoric lithic scatter. Of the 17 sites, 88 percent (n=15) are in the low cultural resource intensity zone and 12 percent (n=2) are in the moderate cultural resource intensity zone. There are no sites in the high cultural resource intensity zone along this route variation. An unrecorded segment of the Old Victory Highway is crossed by Link C93.

There are no NRHP-listed properties, NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components along Variation 1. The Old Victory Highway is a visually sensitive cultural resource along Variation 1.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Class I sites potentially affected by Variation 2 are similar to those identified for Alternative WYCO-B, except for five additional sites in the low cultural resource intensity zone. The differences in the number and type of sites occur along Link C95. Sites identified along Variation 2, but not along Alternative WYCO-B, include 2 prehistoric lithic procurement areas, 1 prehistoric lithic scatter, 1 prehistoric rock shelter, and 1 prehistoric single room structure. Of the 19 sites, 90 percent (n=17) are in the low cultural resource intensity zone and 10 percent (n=2) are in the moderate cultural resource intensity zone. There are no sites in the high cultural resource intensity zone along this route variation. An unrecorded segment of the Old Victory Highway is crossed by Link C95.

There are no NRHP-listed properties, NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components along Variation 2. The Old Victory Highway is a visually sensitive cultural resource along this route variation.

G.5.15.3 Environmental Consequences

Alternative WYCO-B (Links C92, C171, C173, and C174)

Of the three routing options considered for comparison, Alternative WYCO-B has 0.2 mile of high, 0.2 mile of moderate, and 6.1 miles of low cultural resource intensity. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 0.2 mile of high cultural resource intensity is the result of one site (prehistoric lithic scatter) in the Project APE at Link C174. This prehistoric site has been determined not eligible for the NRHP and, therefore, it is not evaluated for proposed Project impacts. It is anticipated that one unrecorded segment of the Old Victory Highway would be crossed by Link C92. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of the transmission line, associated facilities, and access roads, and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility; and direct and indirect long-term visual and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources identified along Alternative WYCO-B include the Old Victory Highway, which is in the Project APE, and the Deerlodge Road. The Deerlodge Road, constructed in 1966, is the only entrance to the eastern portion of the Dinosaur National Monument (NPS 2013). The road is approximately 1.0 mile to the northwest of Link C173, outside of, but adjacent to, the boundary of the Project APE. Although the road corridor is located beyond the Project APE, it could be subject to indirect effects. Issues related to potentially significant effects on the Deerlodge Road were raised by the National Park Service during administrative review of the Draft EIS. There are no records of previously recorded portions of the Deerlodge Road on file at the Colorado State Historic Preservation Officer (SHPO); therefore, it is not included in the Class I counts for Colorado.

If Alternative WYCO-B is selected, a complete Class III intensive pedestrian inventory would be conducted as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP; and sites located in the low and moderate cultural resource intensity zones that meet the criteria establish for potential visual sensitivity also would be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data-sharing agreement with the BLM, and the SHPOs, who would then determine if the Project

has the potential to have an adverse effect (i.e., direct and permanent ground disturbance, direct and indirect long-term visual and auditory intrusions, and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)

Impacts from Variation 1 would be similar to Alternative WYCO-B, except for slight differences in the levels of cultural resource intensity. Variation 1 has 0.0 miles of high, 0.2 mile of moderate, and 6.3 miles of low cultural resource intensity. It is anticipated that one unrecorded segment of the Old Victory Highway would be crossed by Link C93. Without mitigation, the type of potential impacts would be the same as those described for Alternative WYCO-B. Key resources identified along this route variation are the same as those identified for Alternative WYCO-B. The Deerlodge Road, however, would be crossed by Link C93.

If Variation 1 is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B would be employed.

State-parcel Crossing of Deerlodge Road – Variation 2 (Links C94 and C95)

Impacts from Variation 2 would be similar to Alternative WYCO-B, except for slight differences in the levels of cultural resource intensity. Variation 2 has 0.0 miles of high, 0.0 miles of moderate, and 7.7 miles of low cultural resource intensity. It is anticipated that one unrecorded segment of the Old Victory Highway would be crossed by Link C95. The Deerlodge Road, however, would be crossed by Link C95. Without mitigation, the type of potential impacts would be the same as those described for Alternative WYCO-B. Key resources identified along this route variation are the same as those identified for Alternative WYCO-B.

If Variation 2 is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B would be employed.

G.5.15.4 Summary

A total of 14 cultural resource sites were identified in the Class I inventory conducted for the portion of Alternative WYCO-B that crosses through the Deerlodge Road Area. Only 7 percent (n=1) of the sites are in the Project APE. It is anticipated that an unrecorded segment of the Old Victory Highway would be crossed by Link C92. Alternative WYCO-B has the fewest number of cultural resources.

Class I sites potentially affected by Variation 1 are similar to those identified for Alternative WYCO-B, except for three additional sites in the low cultural resource intensity zone. There are no known sites in the high cultural resource intensity zone along this route variation; however, it is anticipated that an unrecorded segments of the Old Victory Highway would be crossed by Link C93. Variation 1 has the second highest number of cultural resources.

Class I sites potentially affected by Variation 2 are similar to those identified for Alternative WYCO-B, except for five additional sites outside of the Project APE. There are no known sites in the high cultural resource intensity zone along this route variation; however, it is anticipated that an unrecorded segment of the Old Victory Highway would be crossed by Link C95. Deerlodge Road Area Variation 1 has the highest number of cultural resources.

There are no NRHP-listed properties, NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components along these alternative/route variations. The Old Victory Highway is a visually sensitive cultural resource along all three routing options. Key resources identified along these routing options are the Old Victory Highway and the Deerlodge Road, which would be crossed by Variation 1 and Variation 2.

Impacts from Alternative WYCO-B would be similar to Variation 1 and Variation 2, except for slight differences in the levels of cultural resource intensity. Of these, Alternative WYCO-B has the highest miles of high cultural resource intensity. No cultural resources have been documented in the high cultural resource intensity zone along the other two routing options. Compared to Alternative WYCO-B, Variation 1 has the same miles of moderate cultural resource intensity and an additional 0.2 mile of low cultural resource intensity. Variation 2 has 0.0 miles of moderate and an additional 1.6 miles of low cultural resource intensity than Alternative WYCO-B. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads, and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility; and direct and indirect long-term visual and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

If one of these routing options is selected, a complete Class III intensive pedestrian inventory would be conducted as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP; and sites located in the low and moderate cultural resource intensity zones that meet the criteria establish for potential visual sensitivity also would be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data-sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance, direct and indirect long-term visual and auditory intrusions, and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

G.5.16 Noise

G.5.16.1 Local Setting

This section describes the audible noise calculations for a portion of the proposed route near Dinosaur National Monument in Colorado. Specific consideration is given to the audible noise levels at an NPS kiosk, located at (40°24'16.79"N, 108°20'35.08"W), near the intersection of Deerlodge Road and U.S. Highway 40. Sound levels at the NPS kiosk are reported in this section for fair and foul weather conditions, accounting for the calculated audible noise level of the proposed transmission line and the estimated sound level of the environment audible noise levels at the NPS kiosk were calculated for the three routing options in this area:

- **Alternative WYCO-B**. This routing option passes south of the kiosk and includes Links C171 and C173. The nearest approach of Alternative WYCO-B to the NPS kiosk is 6,353 feet (1.2 miles).
- **National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1**. Variation 1 is nearest the NPS kiosk, which includes Links C93 and C94. The kiosk is located at a pull-off area on Deerlodge Road, adjacent to the northwest edge of U.S. Highway 40. On this routing option,

the transmission line would cross between Highway 40 and the kiosk, passing within 316 feet of the NPS kiosk.

- **State-parcel Crossing of Deerlodge Road – Variation 2**. Variation 2 includes Links C94 and C95. The nearest approach of Variation 2 to the NPS kiosk is 5,472 feet (1.0 mile).

G.5.16.2 Affected Environment

A discussion of transmission line audible noise is included in Section 3.2.23.1.3 of this EIS. Calculated audible noise profiles for transects of the route variations are presented in Appendix O. Near the NPS kiosk, the Project was modeled with the configuration of cross-section 1 (Appendix O, Figure O-1), which depicts the Project at locations where adjacent lines are located at distances greater than 500 feet from the centerline of the proposed 500kV circuit.

The audible noise contribution from the transmission line varies in time. To account for fluctuating sound levels, statistical descriptors are used to describe environmental noise. Exceedance levels (L levels) refer to the A-weighted sound level that is exceeded for a specified percentage of time. Thus, the L_5 level refers to the noise level that is exceeded only 5 percent of the time. The median sound level (L_{50}) refers to the sound level exceeded 50 percent of the time. For the proposed transmission line, calculated L_{50} levels are higher in foul weather than fair weather, and foul weather audible noise is independent of precipitation rate.

The audibility of the Project at the NPS kiosk was assessed by comparing the effect of audible noise sources in the environment, with and without the contribution of the proposed transmission line. Existing audible noise sources include natural ambient sounds[1], man-made sources[2], and rain noise[3]. Sound levels from these sources, are combined according to the following equation where L_N represents the sound level for the Nth source and L_Σ is the cumulative sound level.

$$L\_\Sigma=10\cdot\log\_10(\llbracket 10\rrbracket\hat{}(L\_1/10)+\llbracket 10\rrbracket\hat{}(L\_2/10)+\cdots+\llbracket 10\rrbracket\hat{}(L\_N/10)),(X\text{-}1)$$

The audibility of the Project is assessed by comparing the cumulative sound levels with and without the contribution of the transmission line in the above equation. For small differences in cumulative sound level (less than 3 dB) Project-related audible noise generally would be imperceptible to an observer at the NPS kiosk. Table G-17 provides a key to audibility for different increases in cumulative sound level.

TABLE G-17
AUDIBILITY OF DIFFERENT CHANGES IN CUMULATIVE SOUND LEVELS

Increase in Sound Level (decibels)	Audibility
0 to 3	Generally insignificant change in perceived loudness (insignificant)
3	Threshold of human perceptibility for loudness changes (perceptible)
5	Clearly noticeable change in perceived loudness (clearly noticeable)
10	Perceived doubling in loudness change (doubling or more)

[1]A level of 25.4 dBA, excluding man-made sources of audible noise such as traffic and aircraft, is used as the natural ambient sound level in Table G-19.

[2]According to 2013 data from the Colorado Department of Transportation Traffic Data Explorer and Station ID 101808, average annual daily traffic volume along U.S. Highway 40 is 660 vehicles, with 40 single unit trucks and 130 combination trucks. A level of 34.0 dBA, including man-made sources of audible noise such as traffic and aircraft, is used as the existing ambient sound level in Table G-19.

[3] Rain noise in this appendix is based on predictions from Miller LN, "Sound Levels of Rain and of Wind in the Trees," Noise Control Engineering 11(3): 101, November-December 1978. Curve R-1 for mostly bare, porous ground is used for rain sound levels Table G-19.

G.5.16.3 Environmental Consequences

Calculated audible noise levels at the NPS kiosk are summarized for each route variation in Table G-18. For each of the three routing options considered, L_{50} values are given for fair weather conditions (i.e., no precipitation) and for foul weather conditions (i.e., precipitation). For each entry in Table G-18 (Calculated Transmission Line Noise Levels at the NPS kiosk), the audible noise contribution of the transmission line was calculated using two techniques:

- Methods developed at the High Voltage Transmission Research Center and implemented in the software application SUBCALC, which is part of the Enertech EMF [electric and magnetic fields]Workbench Suite; and
- Computer algorithms developed by the Bonneville Power Administration[4].

Each reported audible noise level in Table G-18 reflects the highest audible noise level obtained by either technique.

TABLE G-18
CALCULATED TRANSMISSION LINE NOISE LEVELS
AT THE NATIONAL PARK SERVICE KIOSK

Route Variation	Coordinates of Transmission Line Point Closest to Kiosk	Distance to Kiosk (feet)	Fair Weather L_{50} (dBA)	Foul Weather L_{50} (dBA)
Alternative WYCO-B	40°23'26.88"N, 108°19'45.26"W	6,353	<5.0	<27.0
National Park Service-jurisdiction crossing (Variation 1)	40°24'15.07"N, 108°20'31.68"W	316	28.8	41.7
State-parcel crossing (Variation 2)	40°24'23.89"N, 108°21'45.20"W	5,472	<5.0	<28.0

NOTES:
L_{50} = Median sound level
dBA = Decibels (A-weighted)

An analysis of all natural, rain, and transmission-line audible noise sources is provided in Table G-19 for each routing option.

TABLE G-19
CUMULATIVE AUDIBLE NOISE LEVELS FOR THE CONSTRUCTION ROUTE

Rain Rate	Natural L_{50} (dBA)	Rain Noise (dBA)	Transmisison Line L_{50} (dBA)	Excluding Traffic and Aircraft			Including Traffic and Aircraft		
				Cumulative (dBA)	Increase Over Natural Plus Rain (dBA)	Audibility	Cumulative (dBA)	Increase Over Natural Plus Rain (dBA)	Audibility
Alternative WYCO-B (Links C92, C171, C173, and C174)									
0.00	25.4	-99.0	<5.0	25.4	0.0	Insignificant	25.4	0.0	Insignificant
0.10	25.4	28.0	<27.0	31.7	1.8	Insignificant	31.7	1.8	Insignificant
0.75	25.4	36.8	<27.0	37.5	0.4	Insignificant	37.5	0.4	Insignificant
6.50	25.4	46.1	<27.0	46.2	0.1	Insignificant	46.2	0.1	Insignificant
25.40	25.4	52.0	<27.0	52.1	0.0	Insignificant	52.1	0.0	Insignificant

[4]Bonneville Power Administration. Corona and Field Effects Computer Program, 1991.

TABLE G-19
CUMULATIVE AUDIBLE NOISE LEVELS FOR THE CONSTRUCTION ROUTE

Rain Rate	Natural L_{50} (dBA)	Rain Noise (dBA)	Transmisison Line L_{50} (dBA)	Excluding Traffic and Aircraft			Including Traffic and Aircraft		
				Cumulative (dBA)	Increase Over Natural Plus Rain (dBA)	Audibility	Cumulative (dBA)	Increase Over Natural Plus Rain (dBA)	Audibility
National Park Service-jurisdiction Crossing of Deerlodge Road – Variation 1 (Links C94 and C93)									
0.00	25.4	-99.0	28.8	30.4	5.0	Clearly Noticeable	35.1	1.1	Insignificant
0.10	25.4	28.0	41.7	42.0	12.1	Doubling or more	42.5	7.6	Clearly noticeable
0.75	25.4	36.8	41.7	43.0	5.9	Clearly noticeable	43.4	4.8	Perceptible
6.50	25.4	46.1	41.7	47.5	1.3	Insignificant	47.7	1.3	Insignificant
25.40	25.4	52.0	41.7	52.4	0.4	Insignificant	52.5	0.4	Insignificant
State-parcel Crossing of Deerlodge Road – Variation 2 (Links 94 and 95)									
0.00	25.4	-99.0	<5.0	25.4	0.0	Insignificant	34.0	0.0	Insignificant
0.10	25.4	28.0	<28.0	32.1	2.2	Insignificant	35.8	0.8	Insignificant
0.75	25.4	36.8	<28.0	37.6	0.5	Insignificant	39.0	0.4	Insignificant
6.50	25.4	46.1	<28.0	46.2	0.1	Insignificant	46.4	0.1	Insignificant
25.40	25.4	52.0	<28.0	52.1	0.0	Insignificant	52.1	0.0	Insignificant

NOTES:
L_{50} = Median sound level
dBA = Decibels (A-weighted)

G.5.16.4 Summary

The results show that, for Alternative WYCO-B and Variation 2, Project-related audible noise is imperceptible at the NPS kiosk. For the Variation 1, which is 316 feet from the NPS kiosk, the proposed transmission line clearly would be noticeable (+5.0 dBA) in fair weather conditions, but without considering the effects of traffic. Accounting for man-made audible noise sources, the increase in cumulative sound level (1.1 dBA) reflects masking of transmission-line audible noise by noises from airplanes, traffic, and the like. The greatest increase in cumulative sound level (12.1 dBA), occurs during light precipitation. In this condition for Variation 1, the audible noise level from the transmission line is 41.7 dBA, and not masked by the sound of rainfall.

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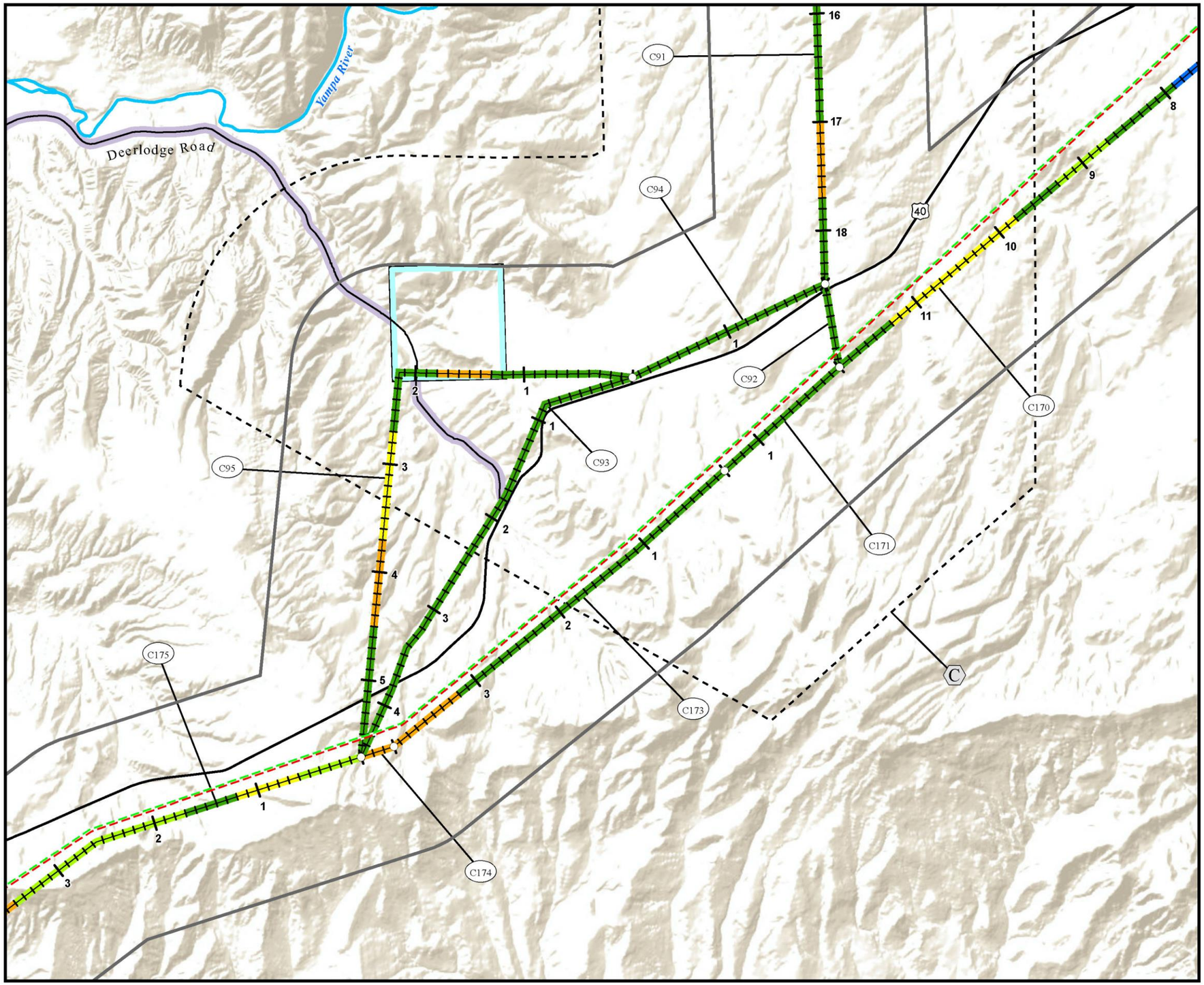
Exhibit G1
Maps



Map G-1

Construction Access Levels

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Construction Access Levels

- 1 - Use existing roads
- 2 - Improve existing roads
- 4 - Construct new access, rolling terrain (8 to 15 percent slope)
- 5 - Construct new access, steep terrain (15 to 30 percent slope)

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[1] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Construction Access Levels, EPG 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Miles

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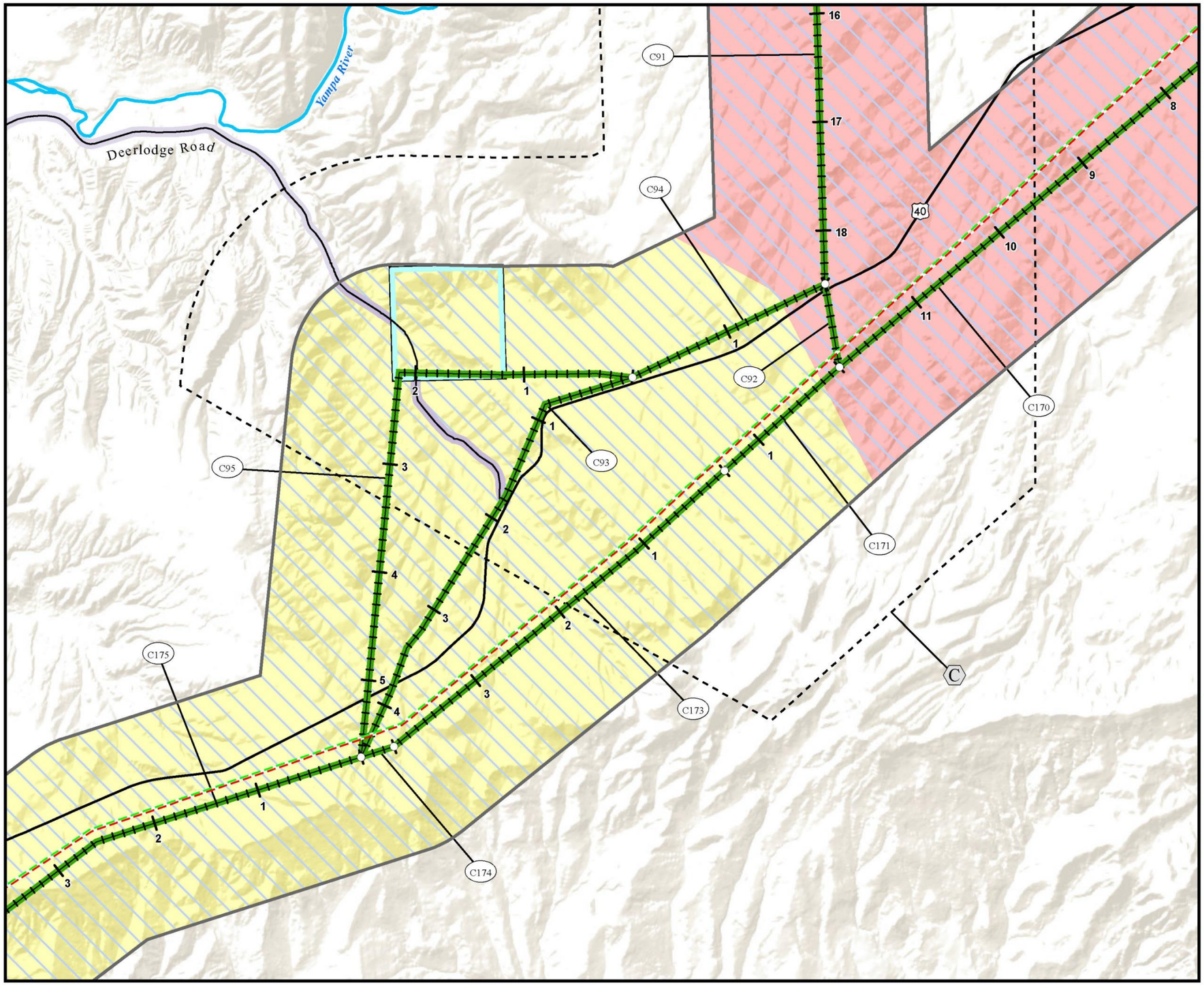

Map G-2

Geologic Hazards

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Geologic Hazards[1]

FLOOD	LANDSLIDE
Low Flood Hazard	Low Landslide Hazard
	High Landslide Hazard

Residual Impact Levels

High	Low
Moderate	No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Flood Hazard Areas, National Pipeline Mapping System 1996;
Landslide Hazard Areas, National Pipeline Mapping System 1995;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Geologic hazards are only shown within the 2-mile-wide earth resources study corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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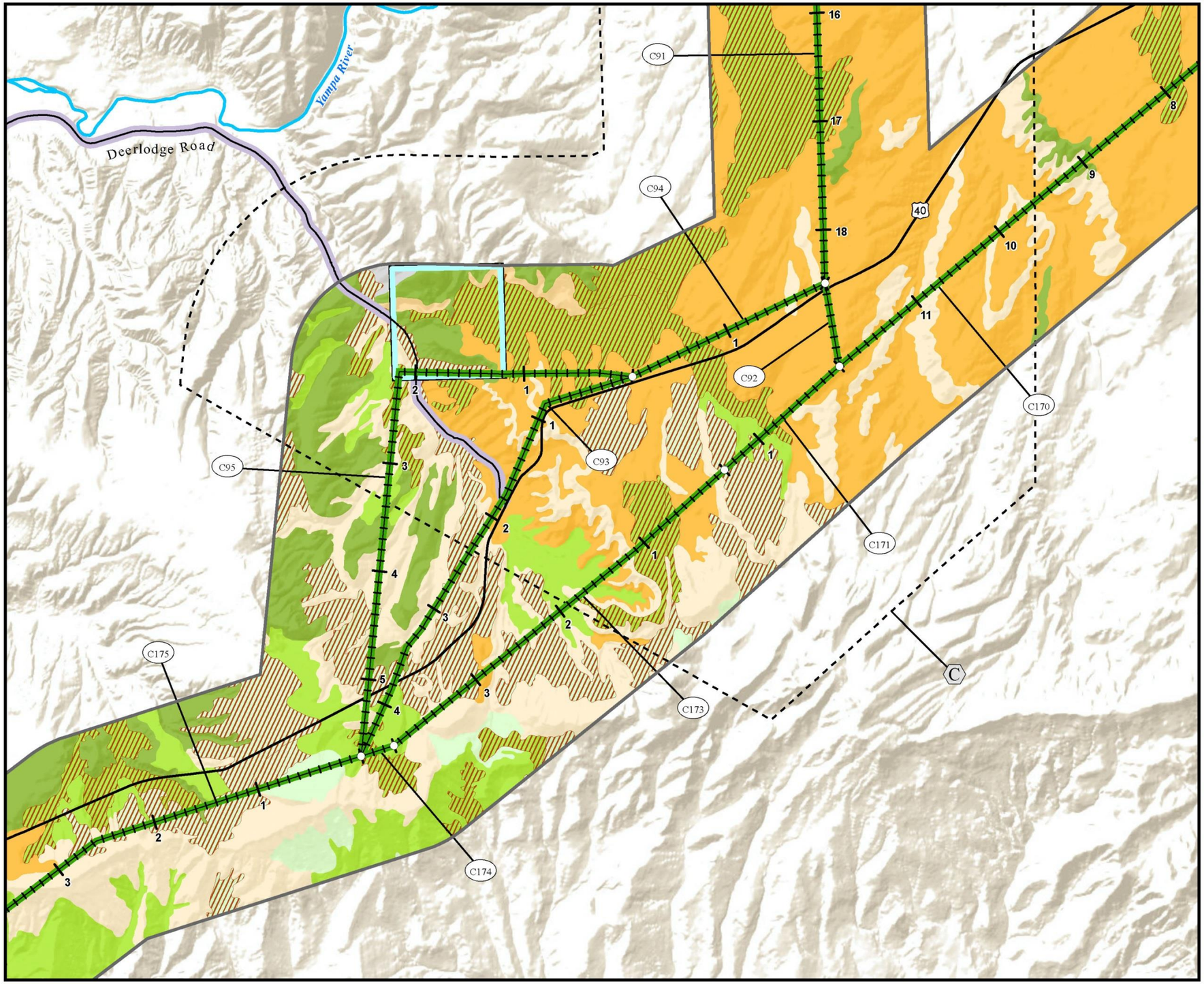

Map G-3

Soil Resources

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Soil Resources[1]

PRIME FARMLAND
- Prime Farmland

SOIL EROSION SUSCEPTIBILITY
- NA[2] Water/Low Wind Erosion Susceptibility
- Low Water/Moderate Wind Erosion Susceptibility
- Low Water/High Wind Erosion Susceptibility
- Moderate Water/Low Wind Erosion Susceptibility
- Moderate Water/Moderate Wind Erosion Susceptibility
- Moderate Water/High Wind Erosion Susceptibility

Residual Impact Levels
- High
- Moderate
- Low
- No Identifiable

Project Features
- Study Corridor
- 5 Alternative Route (with Milepost Identifier)
- Link Number
- Link Node
- Series Compensation Station Siting Area

Land Ownership
- State Land[3] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference
- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
SSURGO Prime Farmland as compiled by EPG, NRCS 2011;
SSURGO Soil Erosion Susceptibility as compiled by EPG, NRCS 2011;
STATSGO Soil Erosion Susceptibility, NRCS 2006;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Prime farmland and soil erosion susceptibility classifications are only shown within the 2-mile-wide earth resources study corridor.
[2]NA = Data not available
[3]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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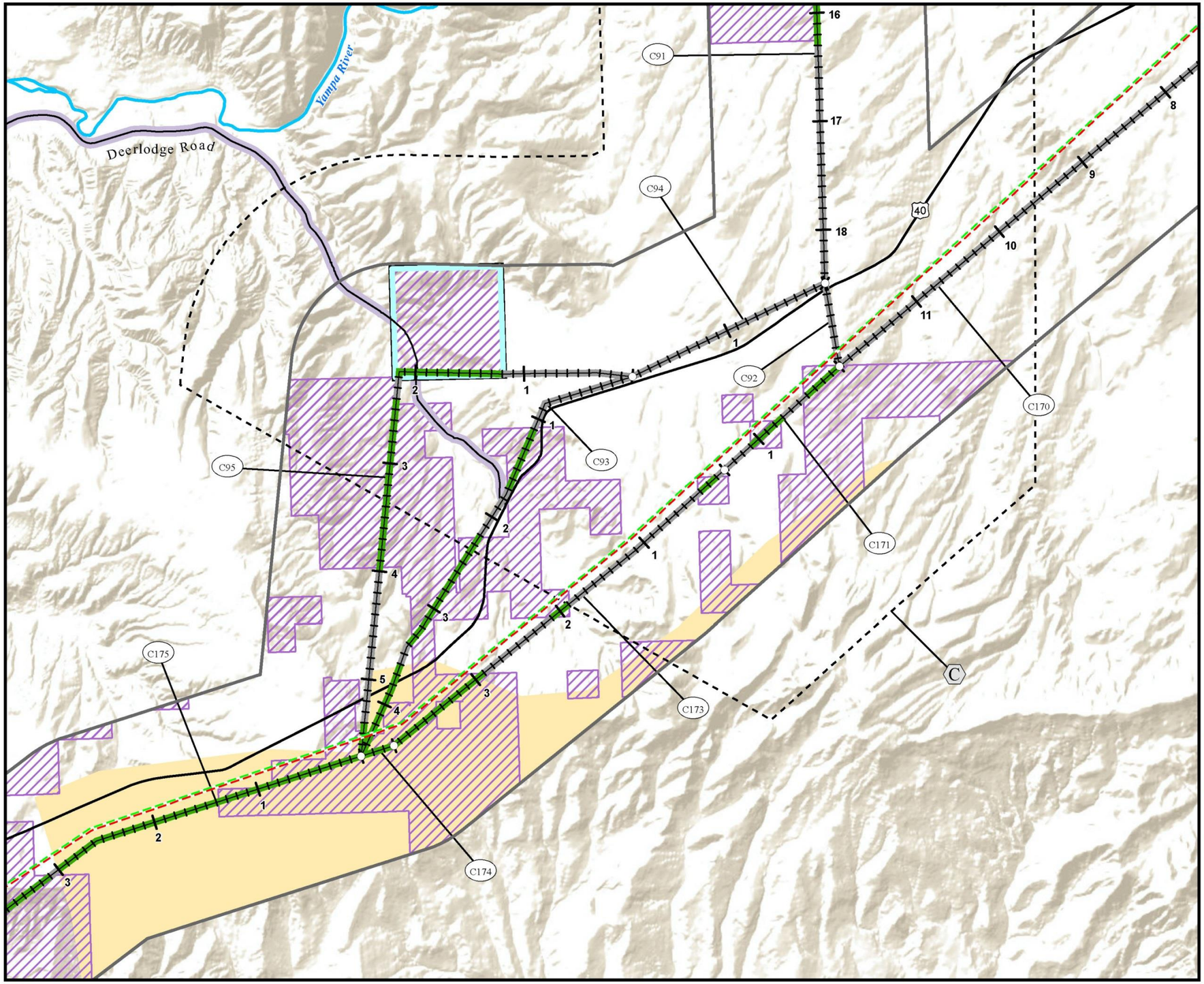

Map G-4

Mineral Resources

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Mineral Resources[1]

- Potential Mineral Resource
- Oil and Gas Lease

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Colorado Oil and Gas Leases, BLM 2012, Colorado State Land Board 2012;
Colorado Coal Potential, BLM 1998;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Mineral resources are only shown within the 2-mile-wide earth resources study corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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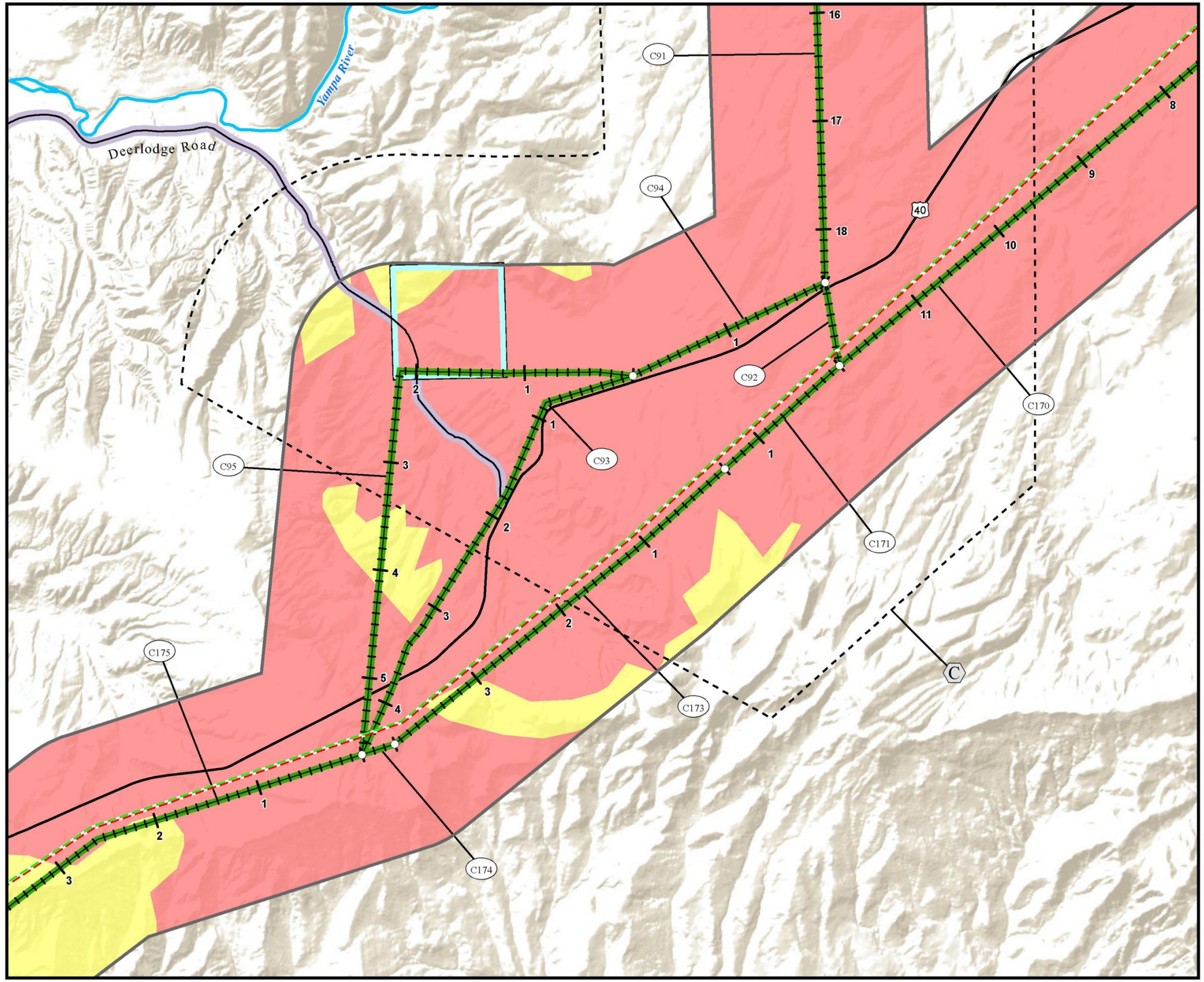

Map G-5

Paleontological Resources

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Paleontological Resources[1]

POTENTIAL FOSSIL YIELD CLASSIFICATIONS
- Very High
- Moderate/Undetermined

Residual Impact Levels
- High
- Moderate
- Low
- No Identifiable

Project Features
- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership
- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference
- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Potential Fossil Yield Classification, USGS 2005;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Paleontological resources are only shown within the 2-mile-wide paleontological resources study corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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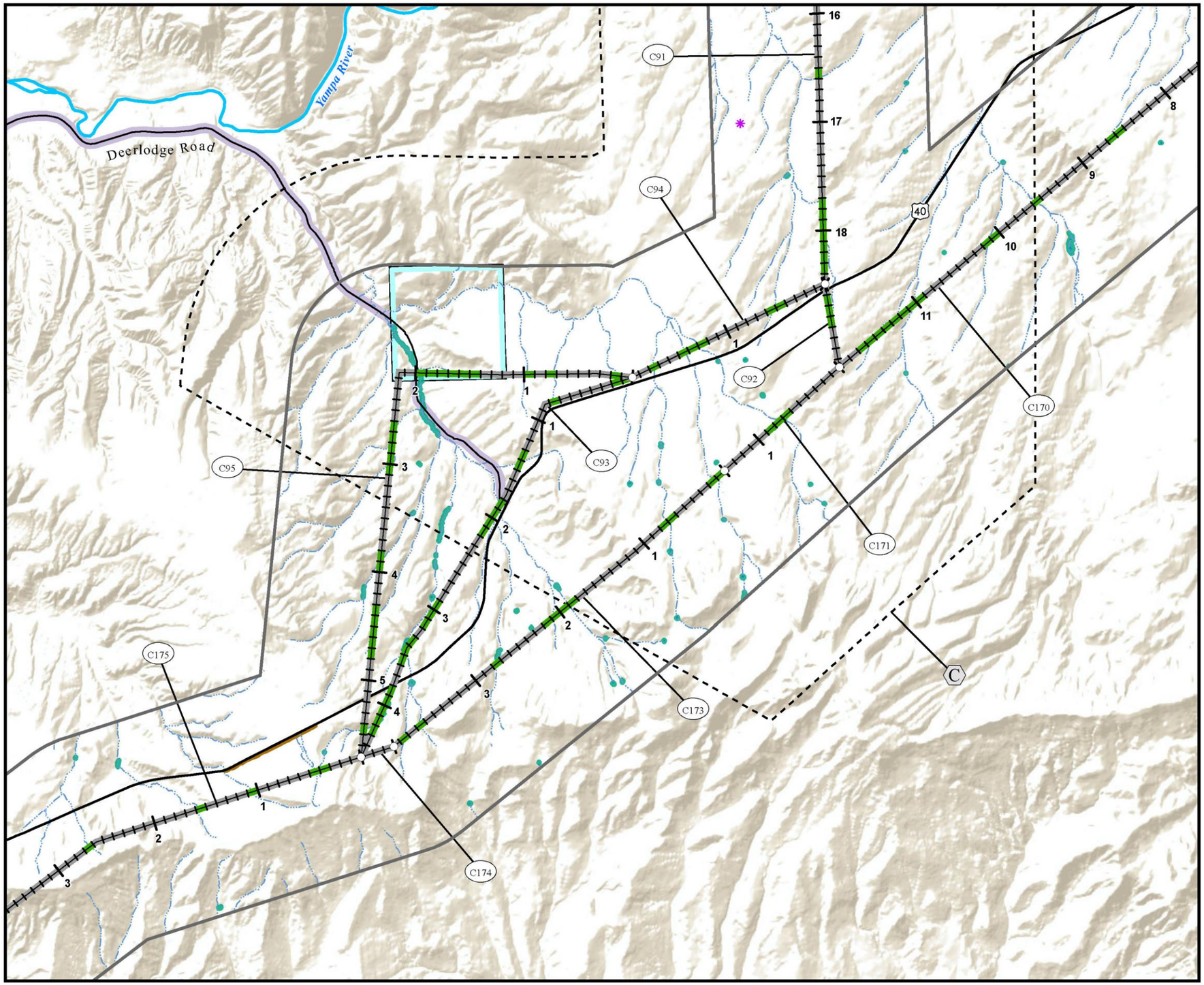

Map G-6

Water Resources

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Water Resources[1]

WETLAND AND RIPARIAN AREAS
- Palustrine Emergent Wetland

LENTIC AND LOTIC WATERS
- Spring or Well
- Canal
- Intermittent Stream
- Lake, Pond, Reservoir, or Perennial Stream

Residual Impact Levels
- High
- Moderate
- Low
- No Identifiable

Project Features
- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership
- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference
- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
National Wetland Inventory, FWS 2011;
National Hydrography Dataset, USGS 2010;
Riparian Areas Land Cover GAP, USGS 2010;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Water resources are identified within the geographic scope of analysis defined in Chapter 3 of the Final Environmental Impact Statement. For visual representation these resources are displayed within a 2-mile-wide corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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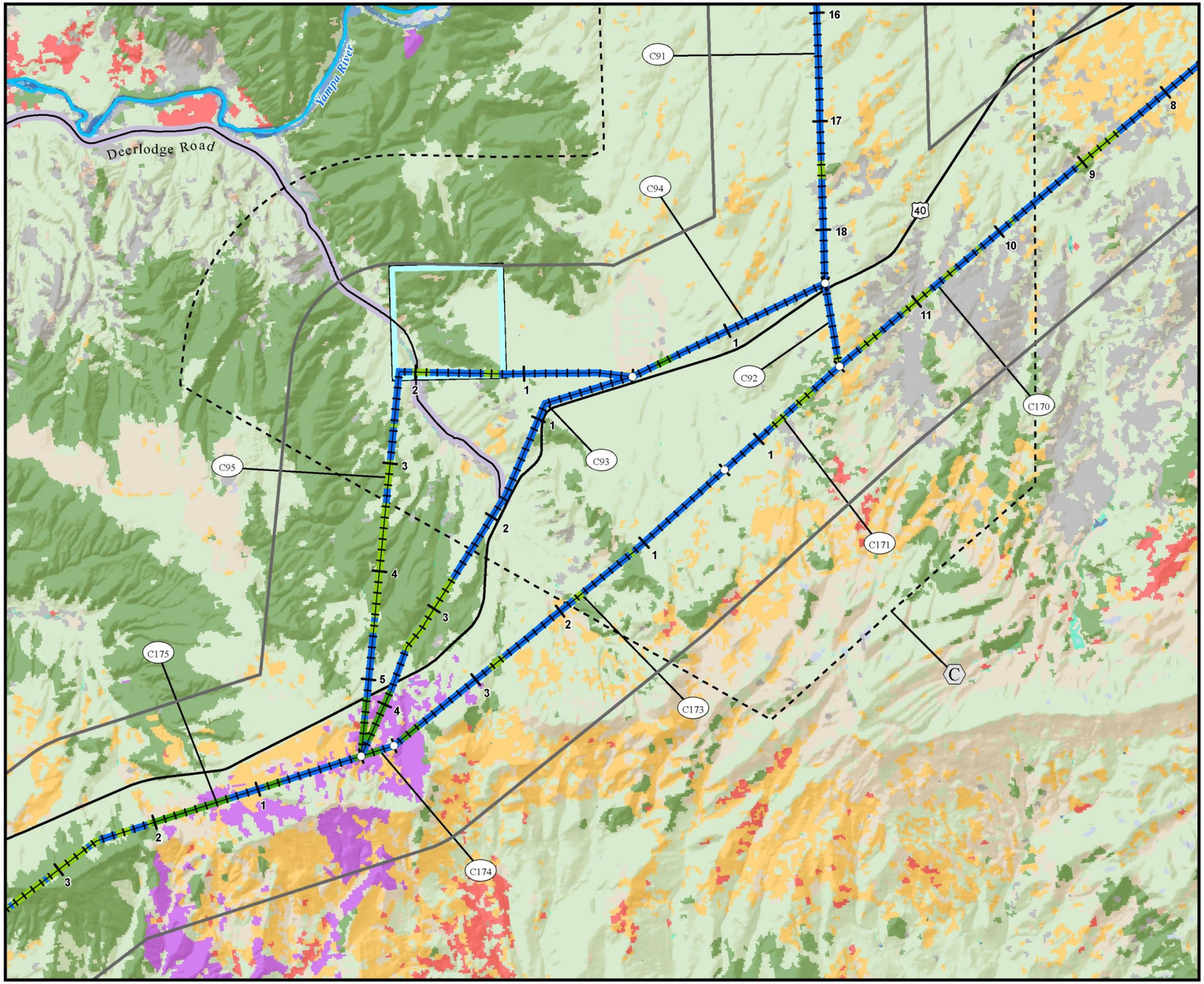

Map G-7

Vegetation

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Primary Vegetation Communities

- Agriculture
- Barren/Sparsely Vegetated
- Big Sagebrush
- Developed/Disturbed
- Grassland
- Invasive
- Mountain Shrub
- Pinyon-juniper
- Riparian
- Shrub/Shrub Steppe
- Water
- Wetland

Residual Impact Levels

- High
- Moderate/High
- Moderate
- Low/Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[1] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Land Cover GAP, USGS 2010; National Wetland Inventory, FWS 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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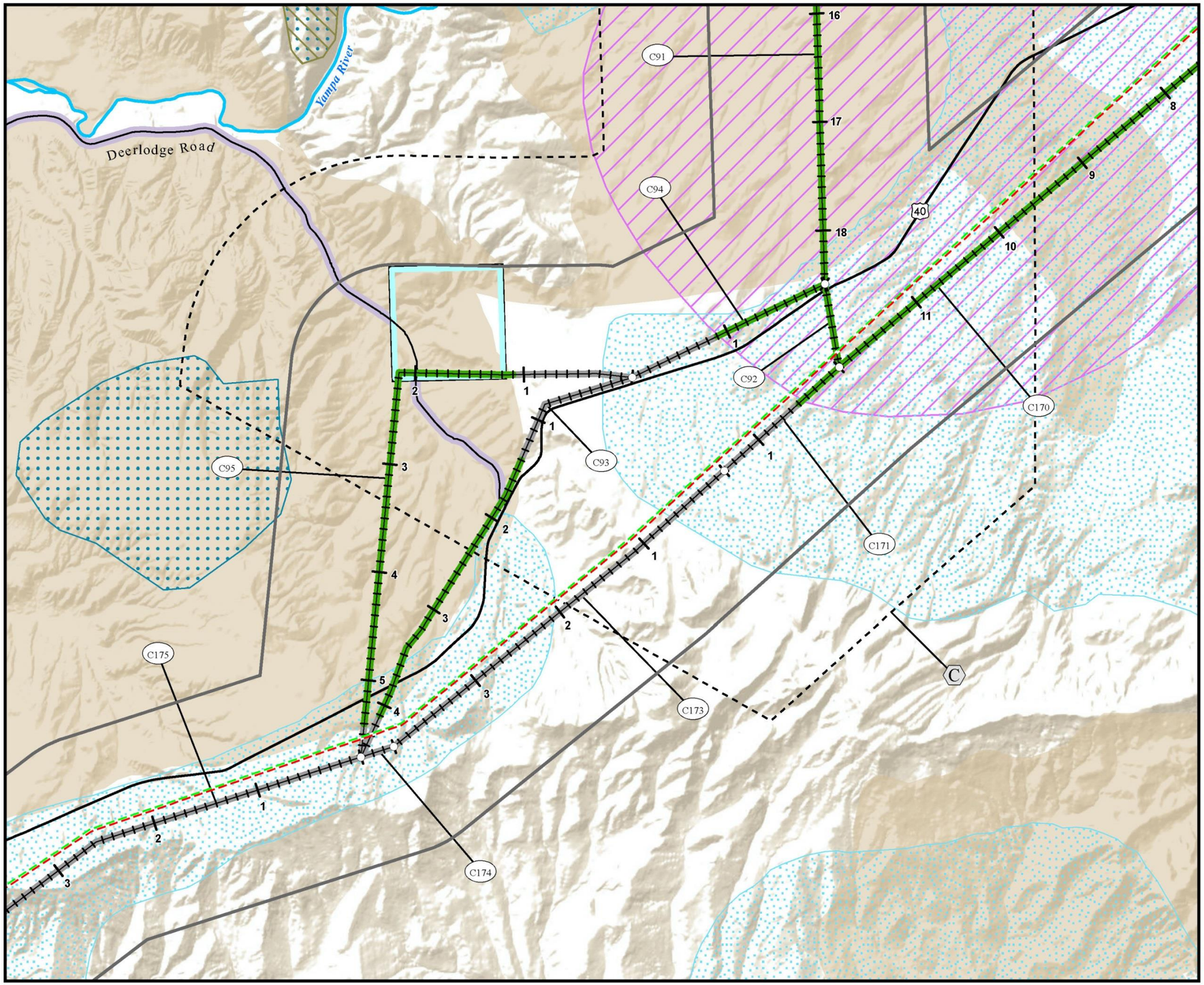

Map G-8

Elk, Pronghorn, and Mule Deer Habitats

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Elk, Pronghorn, and Mule Deer Habitats

- Mule Deer Critical Winter
- Pronghorn Severe Winter
- Elk Summer Concentration
- Elk Severe Winter
- Elk Calving Ground

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[1] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Elk Habitat, CPW 2012; Pronghorn Antelope Habitat, CPW 2012;
Mule Deer Habitat, CPW 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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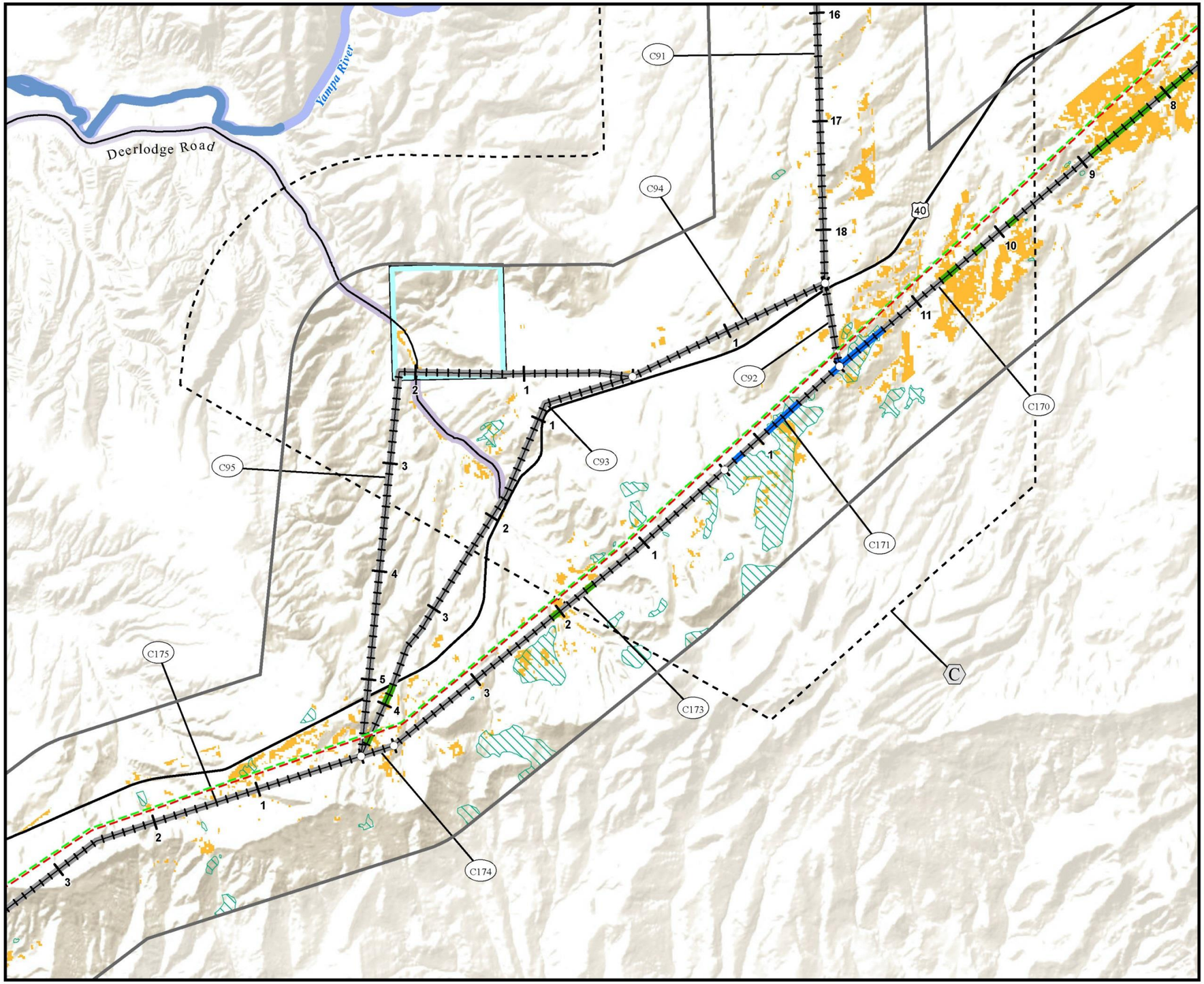

Map G-9

Special Status Fish and Wildlife Habitats

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Special Status Fish and Wildlife Habitats

SPECIAL STATUS WILDLIFE HABITATS

- White-tailed Prairie Dog Potential Colonies[1]
- Mountain Plover Potential Habitat[2]

SPECIAL STATUS FISH HABITATS

- Colorado Pikeminnow Critical Habitat
- Razorback Sucker and Colorado Pikeminnow Critical Habitat

Residual Impact Levels

- High
- Low
- Moderate
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[3] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Colorado River Fish Critical Habitat, FWS 2011;
Mountain Plover Modeled Habitat, EPG 2014;
White-tailed Prairie Dog Modeled Habitat, EPG 2014;
White-tailed Prairie Dog Habitat, BLM 2006, 2008, 2009, 2010, 2011, 2012, CPW 2012;
Series Compensation Station Siting Areas, Rocky Mountain Power 2014;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]White-tailed prairie dog potential colonies are only shown within the 2-mile-wide biological resources study corridor.
[2]Mountain plover potential habitat is only shown within the 1-mile-wide biological resources study corridor.
[3]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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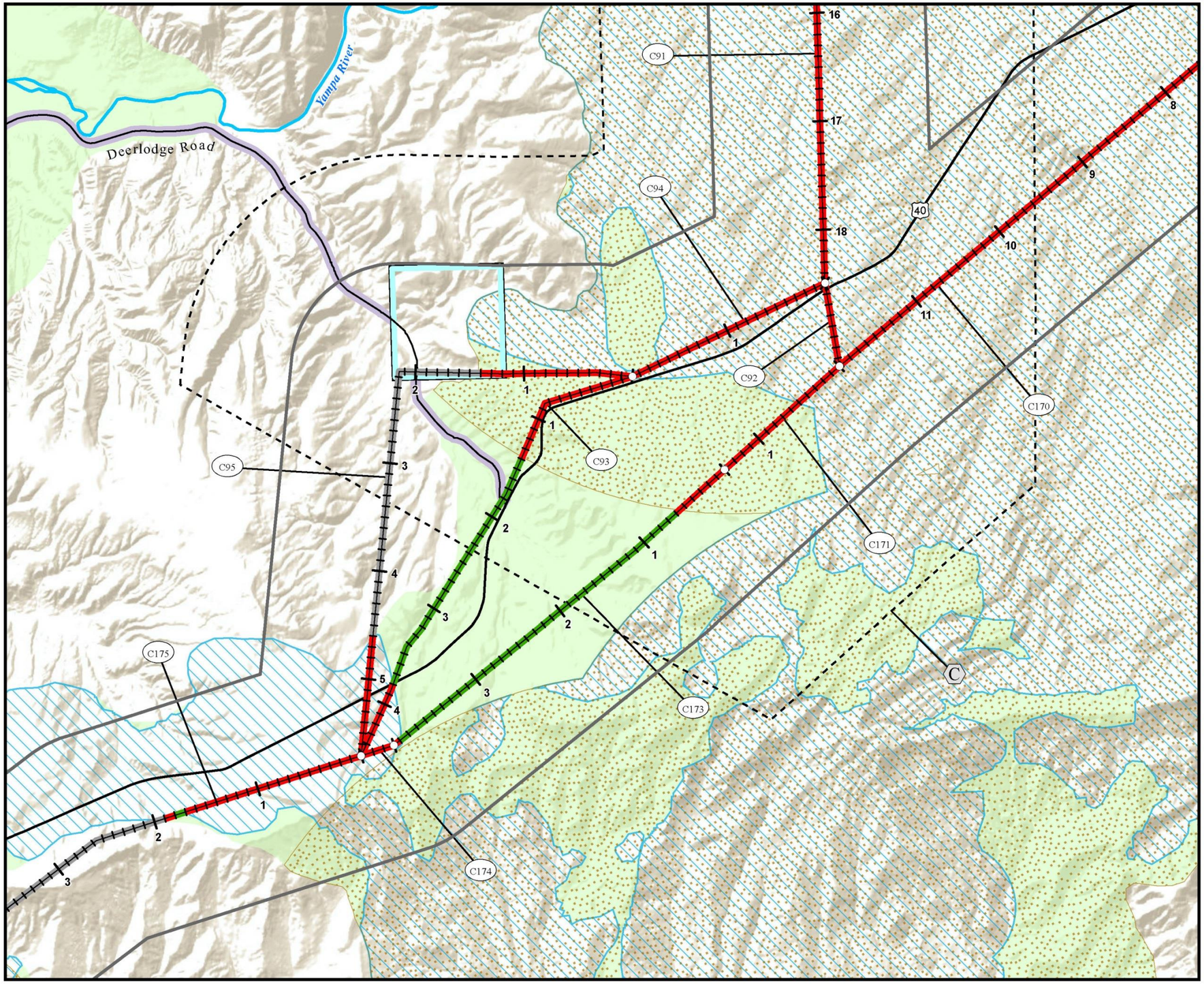

Map G-10

Greater Sage-grouse Habitats

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Greater Sage-Grouse Habitat

- Greater Sage-grouse Priority Habitat
- Greater Sage-grouse General Habitat[1]
- Greater Sage-grouse Habitat within 4 miles of Leks Located in Priority Habitat

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Sage-grouse Preliminary Priority Habitat Colorado, CPW 2012j;
Sage-grouse Leks, CPW 2014,
Sage-grouse Preliminary General Habitat Colorado, CPW 2012j;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Includes preliminary general sage-grouse habitat in Colorado.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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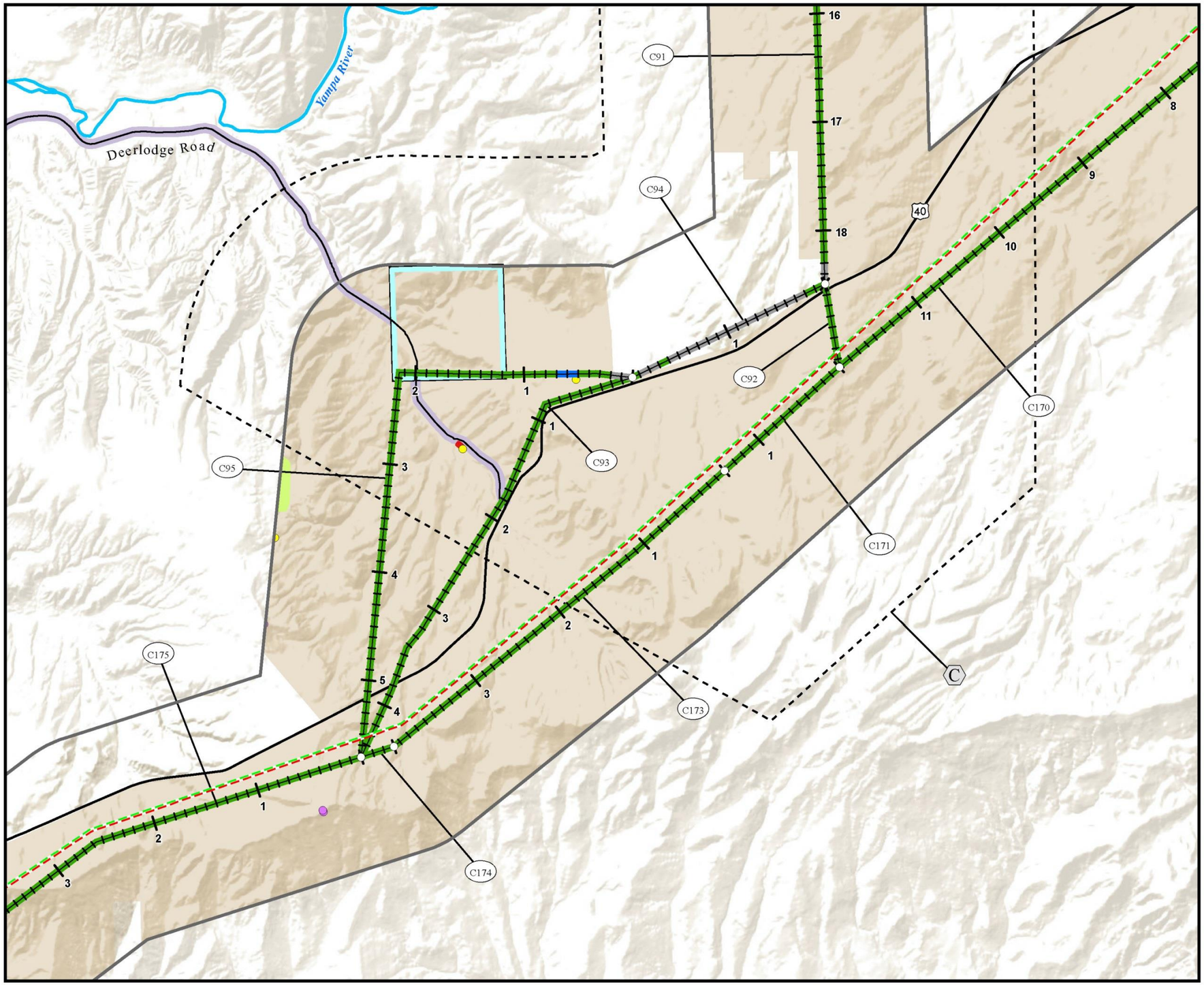

Map G-11

Existing Land Use

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Existing Land Use[1]

- Agriculture
- Grazing Allotment
- Commercial
- Residential
- Communication Facility

Residual Impact Levels

- High
- Low
- Moderate
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Existing Land Use as digitized by EPG, NAIP 2011, 2012, 2013, Bing 2014;
Communication Facilities, FCC 2012; Grazing Allotments, BLM 2009;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Existing land use is only shown within the 2-mile-wide land use study corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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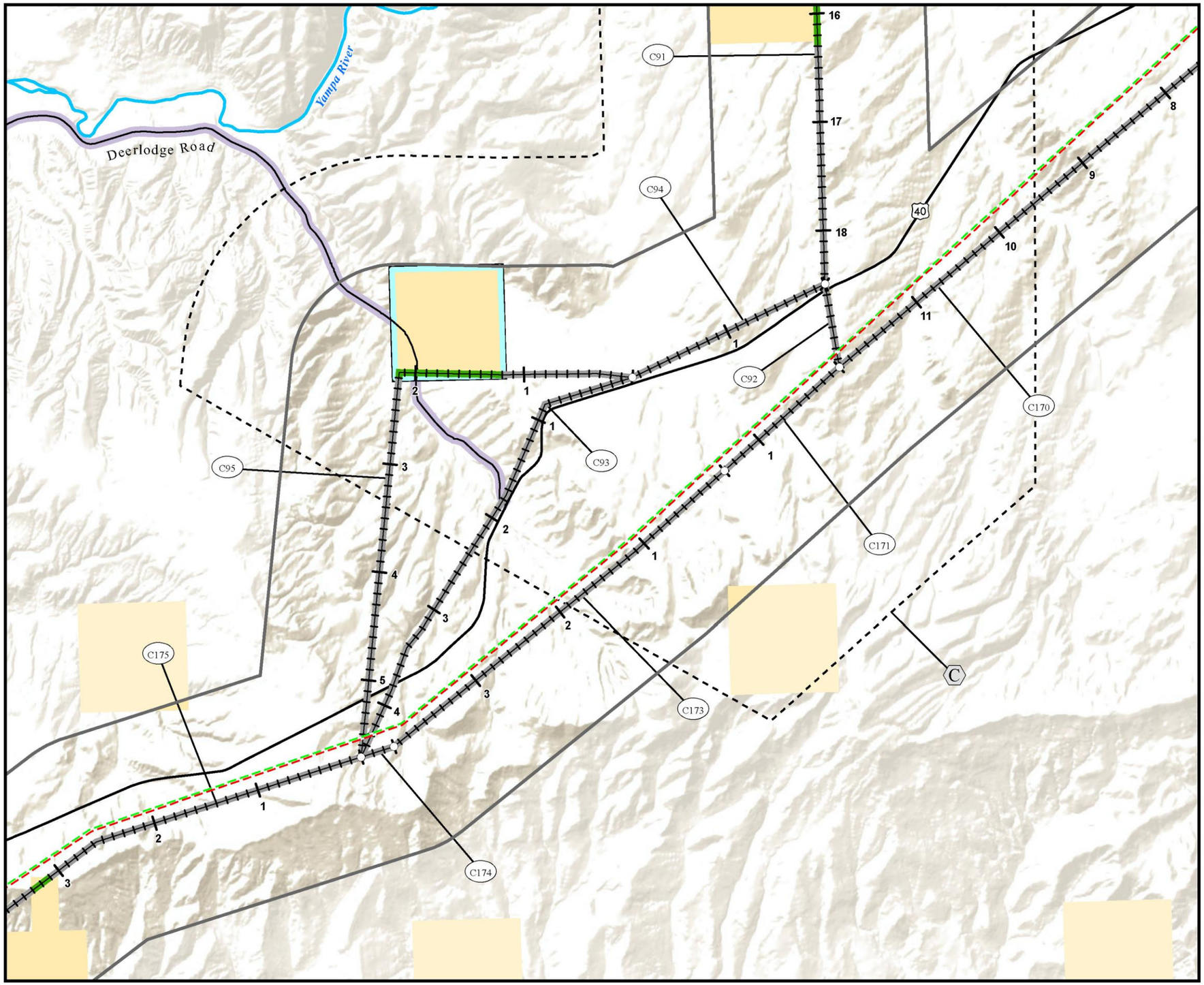

Map G-12

Authorized Land Use

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Authorized Land Use

- Oil and/or Gas Development

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[1] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Oil and Gas Leases, Colorado State Land Board 2012;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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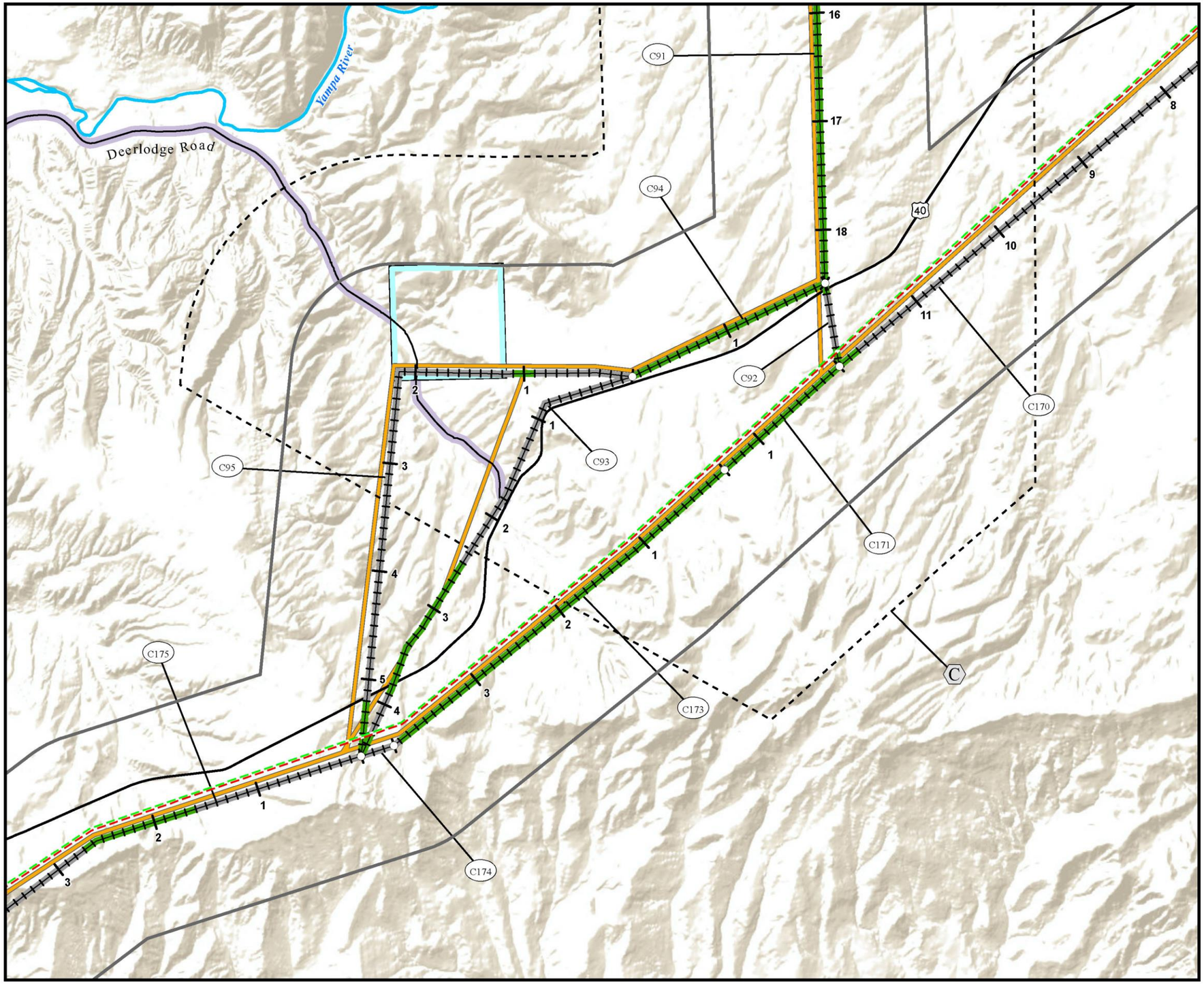

Map G-13

Future Land Use

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Proposed Activities[1]

- Proposed TransWest Express Transmission Line

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
TransWest Express Transmission Line, AECOM 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Only proposed activities that intersect the 2-mile-wide study corridor are displayed on this map.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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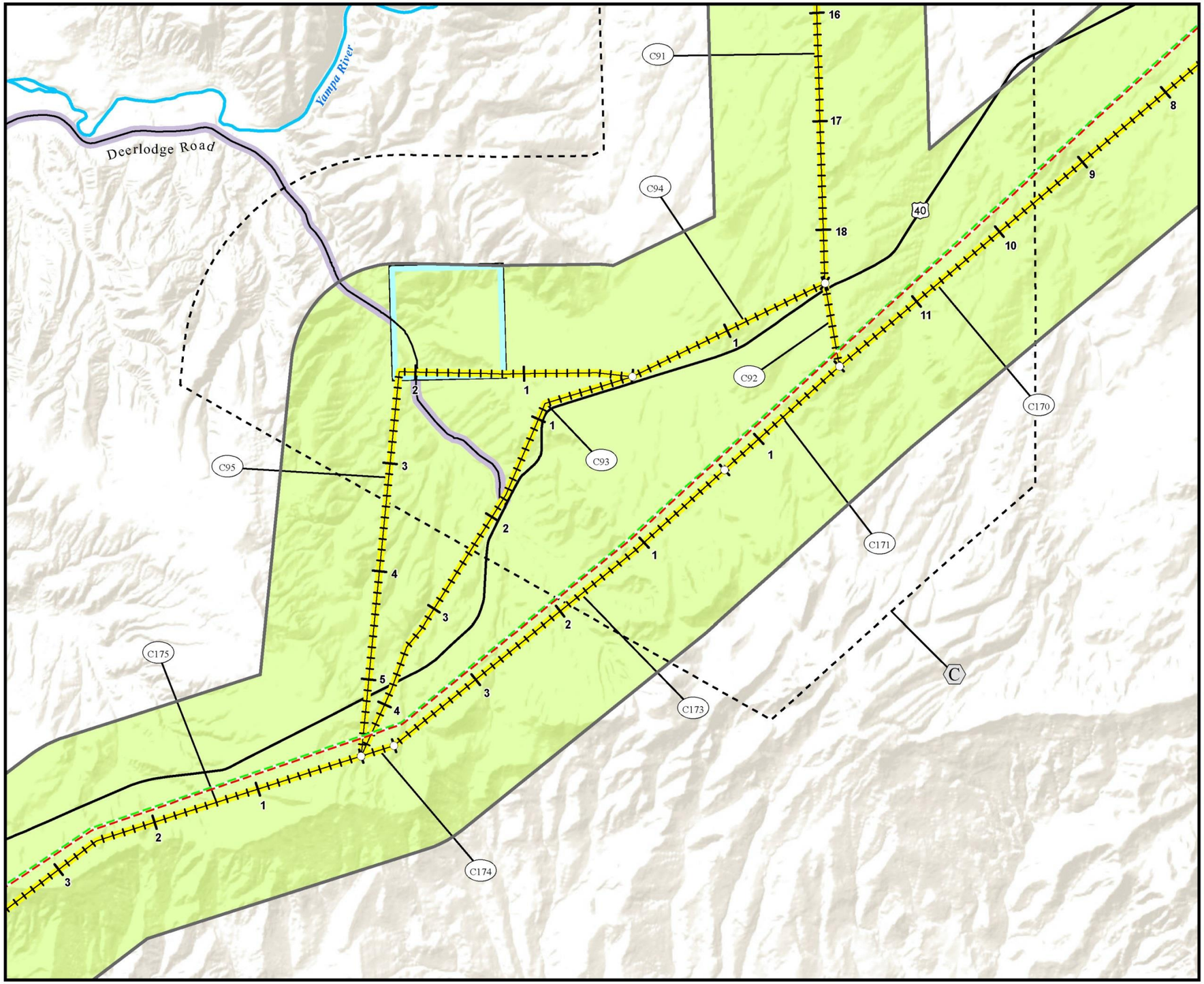

Map G-14

Zoning and General Plan Management Direction

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Generalized Zoning[1, 2]

- Agriculture - Moffat County Zone A

Generalized Permitting[3]

- Not Permitted
- Permitted
- Conditionally Permitted

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[4] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Planned Land Use Zoning, Moffat County 2009;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Generalized zoning is only shown within the 2-mile-wide land use study corridor.
[2]The EPG 2011 Zoning and General Plan Management Direction layer was created using a combination of general plans and zoning ordinances for all counties and cities within the 2-mile-wide land use study corridor.
[3]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city, or county. The generalized permitting is for disclosure and comparison purposes only.
[4]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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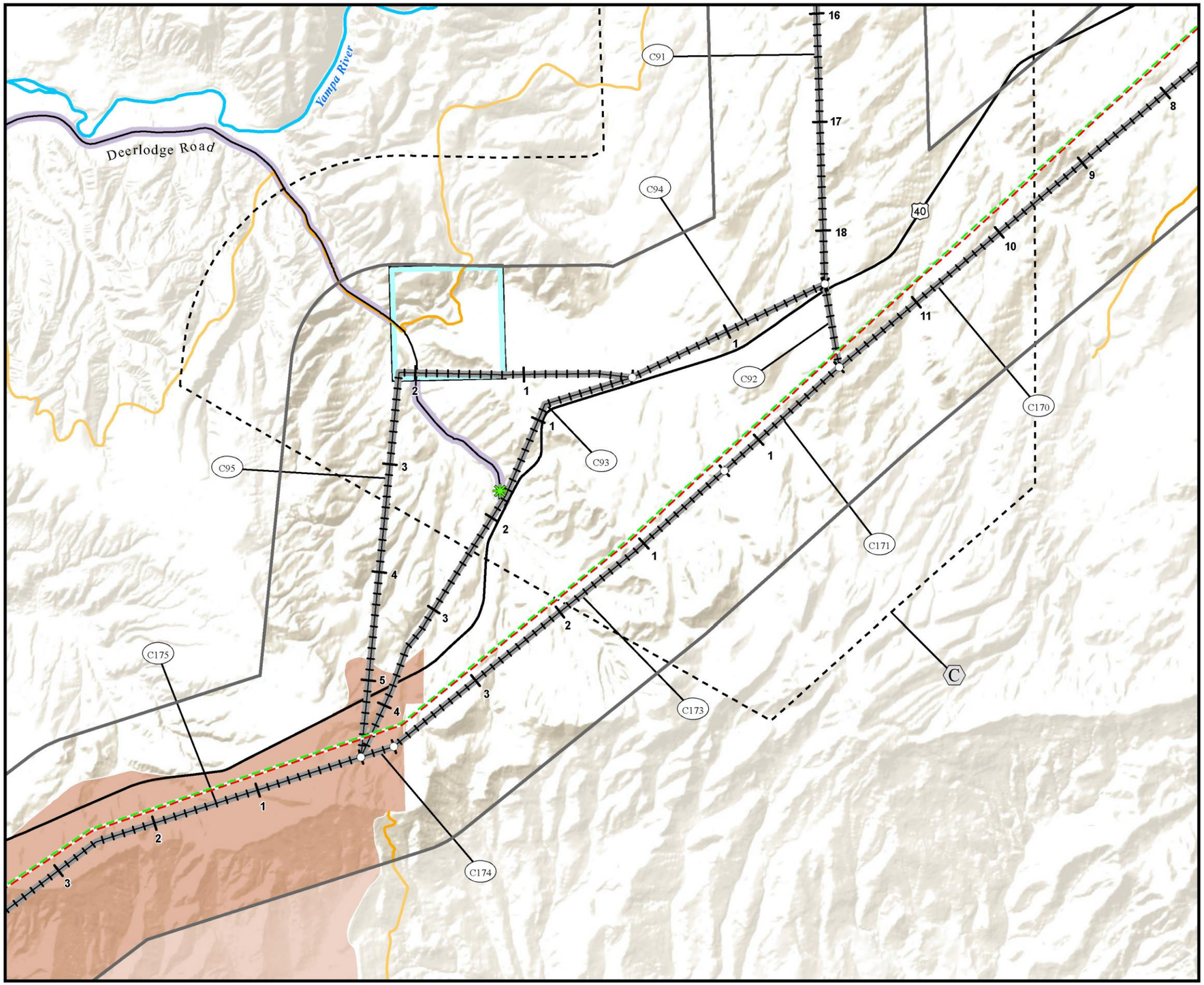

Map G-15

Parks, Preservation, and Recreation

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Recreation Resources[1]

- Motorized Trail
- Dinosaur National Monument Information Kiosk

Recreation Opportunity Spectrum[1]

- Semi-Primitive Motorized/Front/Middle Country

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Recreation Trails, BLM 2011; Dinosaur National Monument Information Kiosk, EPG 2012;
Recreation Opportunity Spectrum, BLM 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Only recreation resources and the recreation opportunity spectrum classes that intersect the 2-mile-wide land use study corridor are shown on this map.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- The Recreation Opportunity Spectrum was not assessed using impact levels. Instead, these areas are discussed in terms of miles the Project would cross and a qualitative discussion of how this crossing may affect the management prescriptions and relevant/important values or special characteristics of these designations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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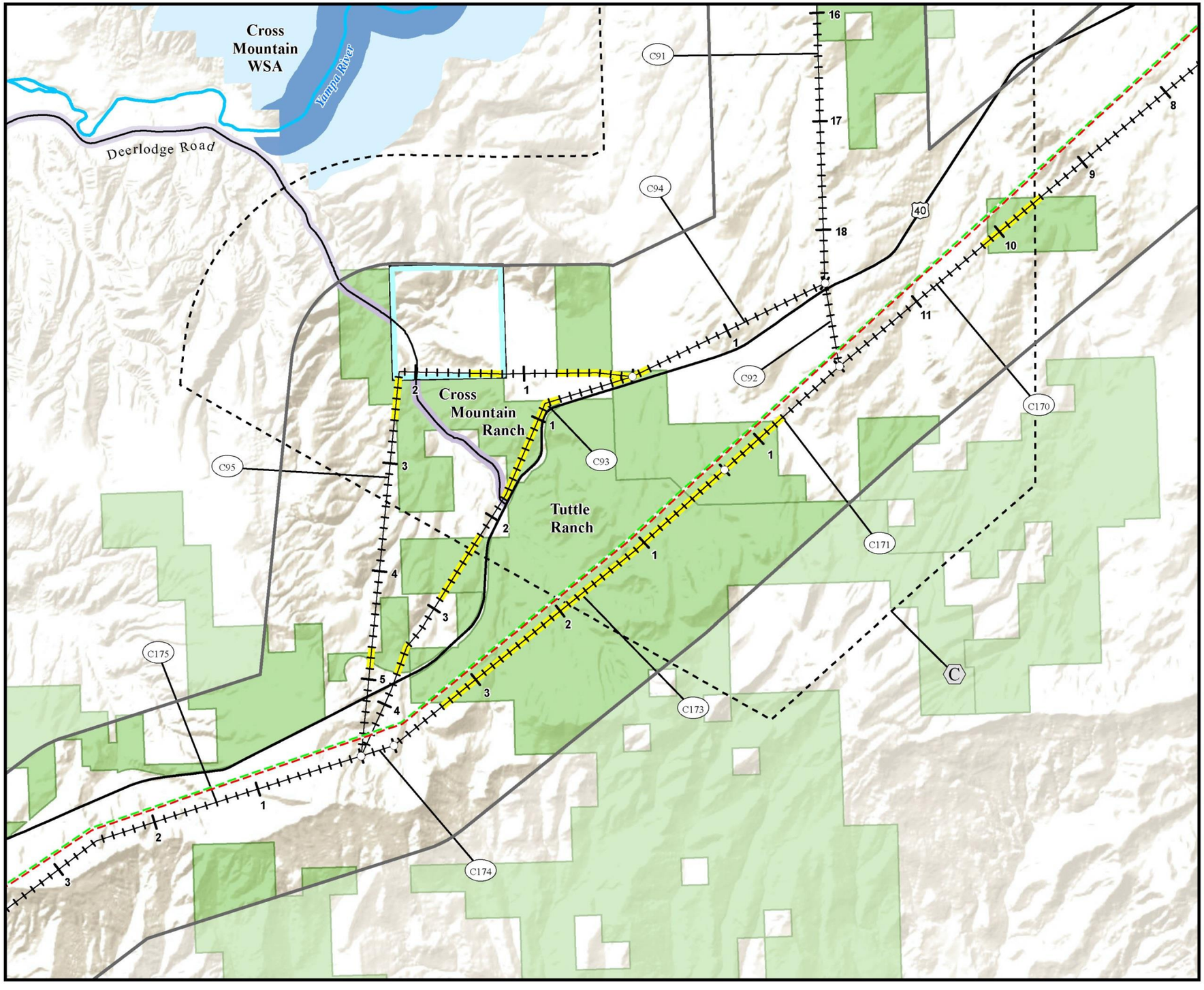

Map G-16

Congressional Designations, Special Designations, and Other Management Areas

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Congressional Designations

- Wild and Scenic River (Suitable)
- Wilderness Study Area (WSA)

Special Designations and Other Management Areas

- Tuttle Ranch and Cross Mountain Ranch Conservation Easements

Area Crossed by Project

- Area Crossed by Project

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[1] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Wild and Scenic Rivers, BLM 2011; Wilderness Study Areas, BLM 2012;
Conservation Easements, CPW 2013, BLM 2015;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
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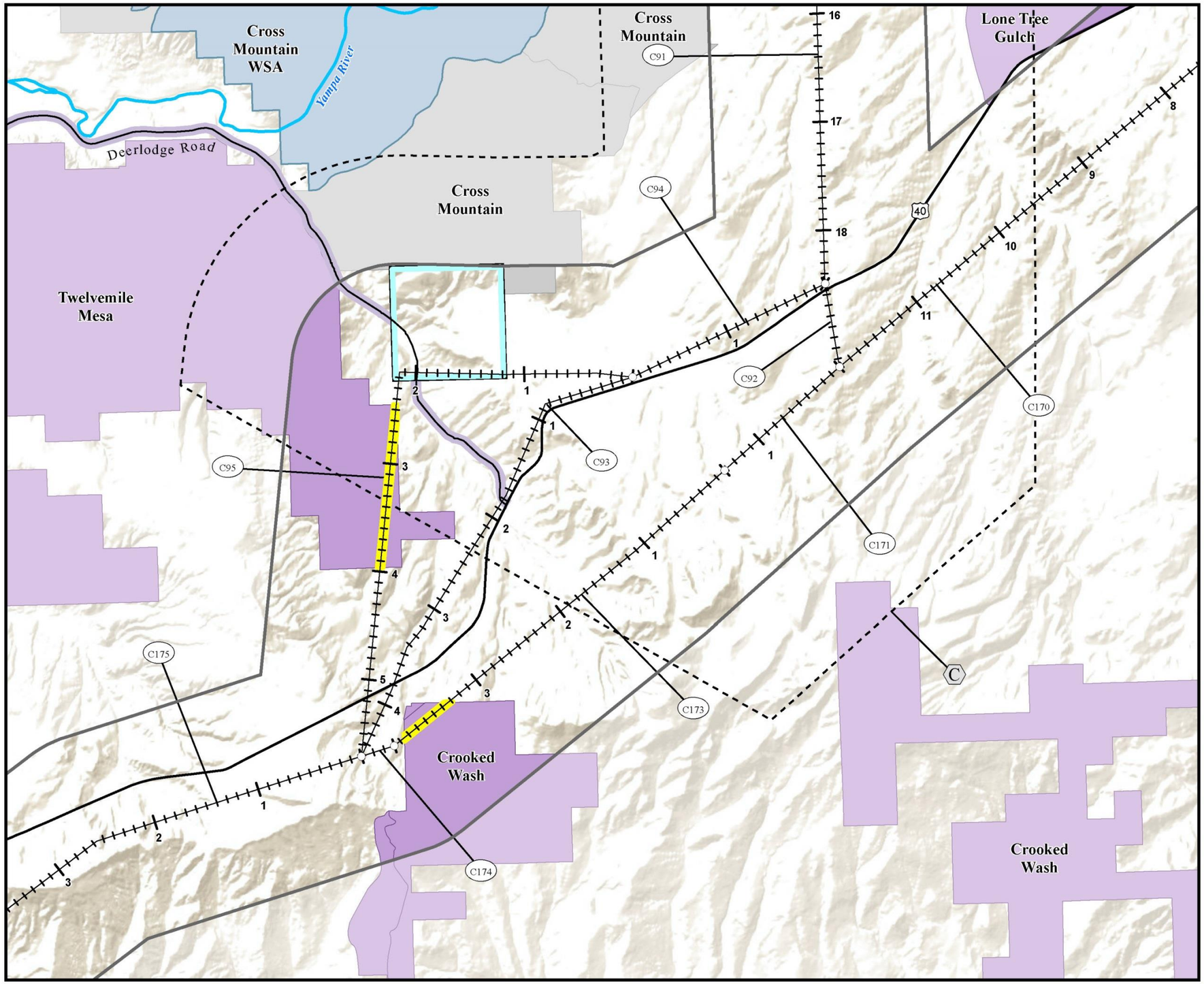

Map G-17

Wilderness Study Areas and Lands with Wilderness Characteristics

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Wilderness Study Areas

- Wilderness Study Area (WSA)

Lands With Wilderness Characteristic Units

- Inventoried Lands with Wilderness Characteristics Pending Planning Process Review
- Lands Inventoried - No Wilderness Characteristics Identified

Area Crossed by Project

- Area Crossed by Project

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[1] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Wilderness Study Areas, BLM 2012;
Lands with Wilderness Characteristics, BLM 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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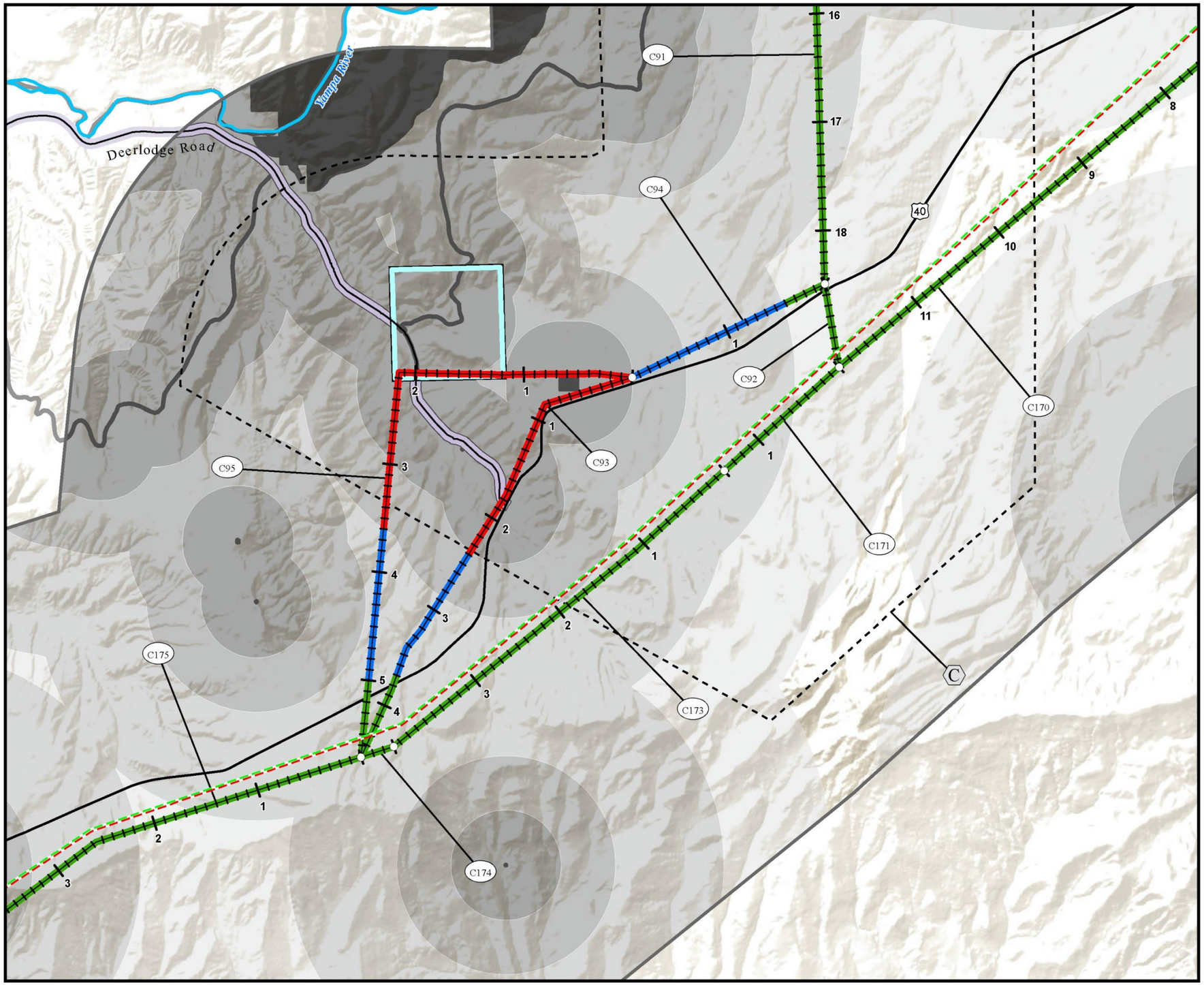

Map G-18

High Concern Viewers

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

High Concern Viewers[1]

HIGH CONCERN VIEWERS
- High Concern Level Viewer

INFLUENCE ZONES
- 0 to 0.5 mile
- 0.5 to 1.0 mile
- 1.0 to 2.0 miles
- 2.0 to 3.0 miles
- Over 3.0 miles

Residual Impact Levels
- High
- Moderate
- Low
- No Identifiable

Project Features
- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership
- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference
- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Existing Land Use as digitized by EPG, NAIP 2011, 2012, 2013, Bing 2014;
Visually Sensitive Travel Routes as digitized by EPG, NAIP 2011, ESRI 2008;
Visually Sensitive Waterways and Water Bodies, USGS 2011;
Recreation Trails, BLM 2012; Wilderness Study Areas, BLM 2012;
Wild and Scenic Rivers, BLM 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]High concern viewers and influence zones are only shown within the 6-mile-wide visual resources study corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
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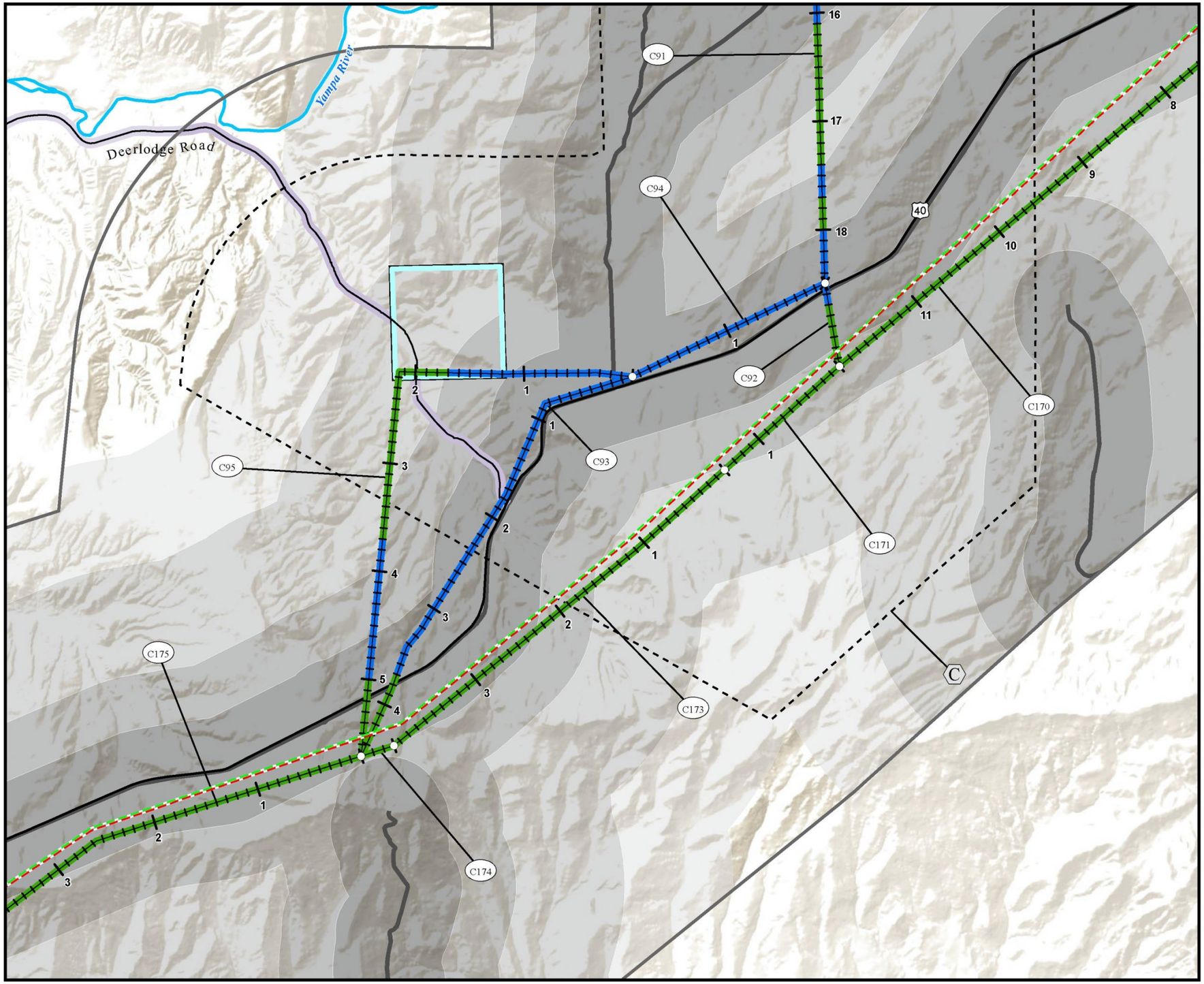

Map G-19

Moderate Concern Viewers

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Moderate Concern Viewers[1]

MODERATE CONCERN VIEWERS
- Moderate Concern Level Viewer

INFLUENCE ZONES
- 0 to 0.5 mile
- 0.5 to 1.0 mile
- 1.0 to 2.0 miles
- 2.0 to 3.0 miles
- Over 3.0 miles

Residual Impact Levels
- High
- Moderate
- Low
- No Identifiable

Project Features
- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership
- State Land[2] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference
- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Existing Land Use as digitized by EPG, NAIP 2011, 2012, 2013, Bing 2014;
Visually Sensitive Travel Routes as digitized by EPG, NAIP 2011, ESRI 2008;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Moderate concern viewers and influence zones are only shown within the 6-mile-wide visual resources study corridor.
[2]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
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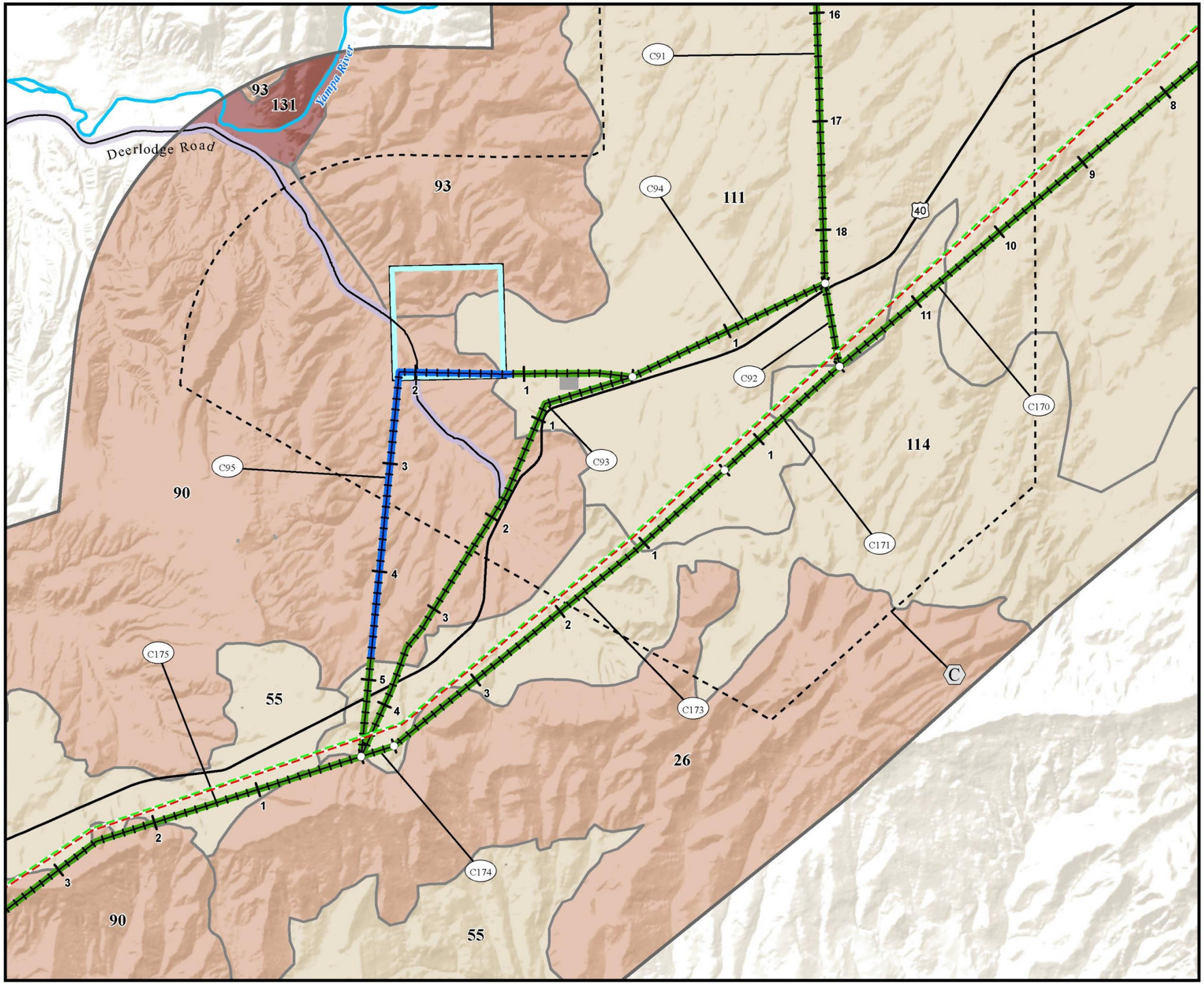

Map G-20

Scenery

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Project-Level Scenery Rating Units[1]

- Class A[2]
  - 131 - Yampa River Canyons
- Class B[2]
  - 26 - Foothills (WB)
  - 90 - Arid Juniper Hills (UB)
  - 93 - Cross Mountain
- Class C[2]
  - 111 - Rolling Steppe
  - 114 - Sagebrush Hills (WB)
  - 55 - Sagebrush Valley (UB)
- Developed[2]

Residual Impact Levels

- High
- Moderate
- Low
- No Identifiable

Project Features

- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership

- State Land[3] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- River or Stream
- U.S. Highway
- Other Road

SOURCES:
Project-level Scenery Rating Units as digitized by EPG, NAIP 2012;
Existing Land Use as digitized by EPG, NAIP 2011, 2012, 2013, Bing 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]Project-level scenery rating units and areas of development are only shown within the 6-mile-wide visual resources study corridor.
[2]The following acronyms correspond to physiographic provinces and sections as described in Physiography of Western United States (Fenneman 1931):
UB = Uinta Basin physiographic section
WB = Wyoming Basin physiographic province
[3]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
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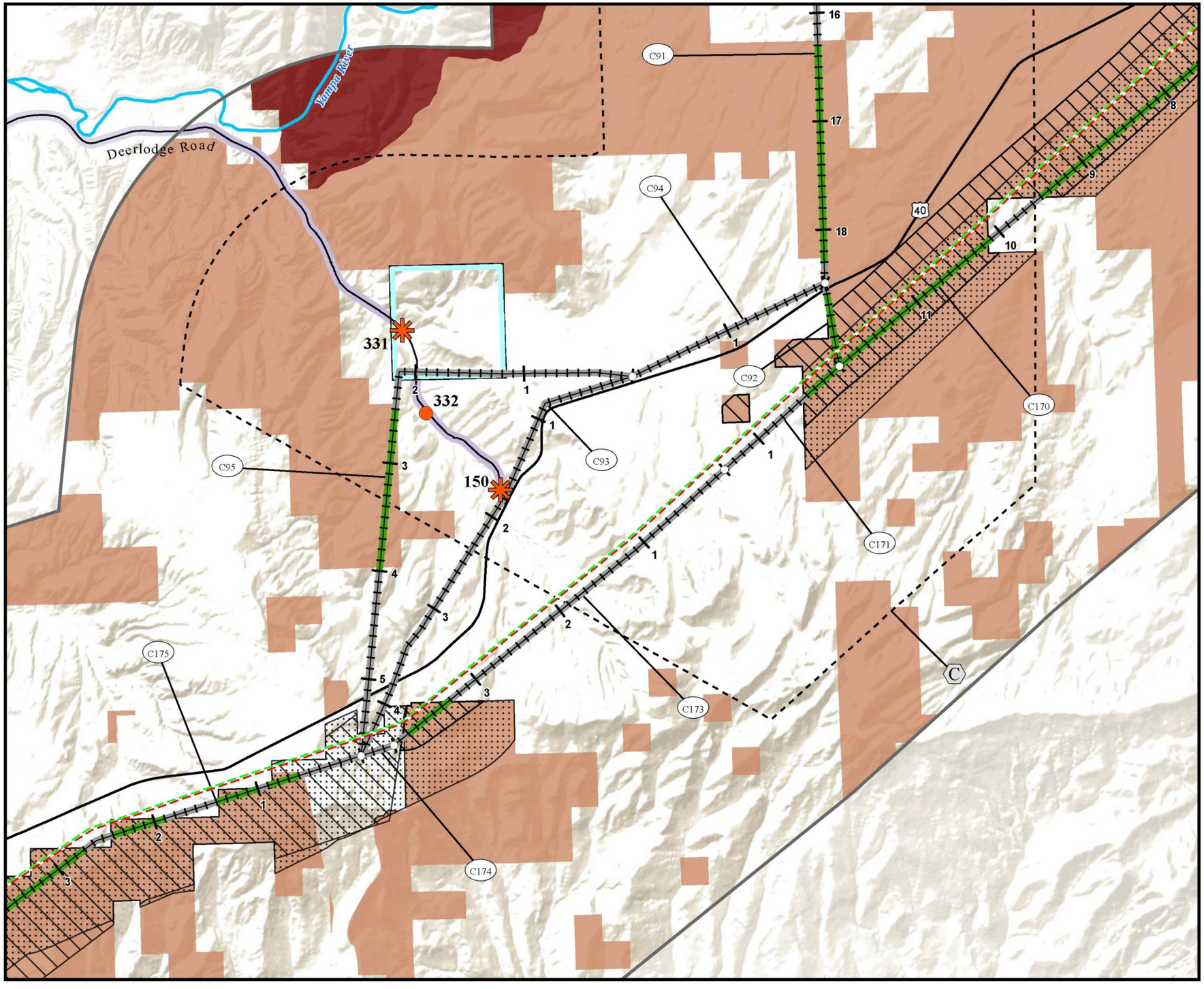

Map G-21

Federal Agency Visual Management Objectives

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Federal Agency Visual Management Objectives[1]

KEY OBSERVATION POINT (KOP) AND SIMULATION LOCATIONS[2]
- #* KOP/Simulation Location
- #● KOP Location

BLM VISUAL RESOURCE MANAGEMENT OBJECTIVES CLASS[3]
- Class I
- Class III

FEDERAL SURFACE UTILITY CORRIDORS[4]
- West-wide Energy Corridor
- Designated Utility Corridor

Residual Impact Levels
- Compliant/Consistent
- Not Applicable
- Not Compliant/Not Consistent

Project Features
- Study Corridor
- Link Node
- 5 Alternative Route (with Milepost Identifier)
- Series Compensation Station Siting Area
- Link Number

Land Ownership
- State Land[5] (where Deerlodge Road crosses)
- Dinosaur National Monument

General Reference
- 345kV Transmission Line
- U.S. Highway
- 138kV Transmission Line
- Other Road
- River or Stream

SOURCES:
Key Observation Points and Simulation Locations, EPG 2012;
VRM, BLM 1987, 1990, 2008, 2011, 2013;
West-wide Energy Corridors, Argonne National Laboratory 2008;
RMP Utility Corridors as digitized by EPG, BLM 1987, 1989, 1990, 1997, 2008, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013;
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Rivers and Streams, ESRI 2008; Highways and Roads, ESRI 2013

NOTES:
[1]BLM VRM classes and federal surface utility corridors are only shown within the 6-mile-wide visual resources study corridor.
[2]KOP names and associated contrast rating worksheets can be found in Appendix N.
[3]No VRM Class II or IV lands are located in this portion of the visual resources study corridor.
[4]Designated utility corridors are from BLM resource management plans and resource management plans.
[5]The National Park Service holds a right-of-way permit from the Colorado State Land Board for Deerlodge Road across this parcel but does not have jurisdiction to require a right-of-way permit for the Project if this route option is selected for the Project.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.

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